UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 SIXTH AVENUE
SEATTLE, WASHINGTON

FINAL OPERABLE UNIT RECORD OF DECISION, DECISION SUMMARY, AND RESPONSIVENESS SUMMARY

FOR THE LEAD-CONTAMINATED
SOIL AND SCRAP MATERIAL
MCCARTY'S/PACIFIC HIDE AND FUR
SUPERFUND SITE

Declaration for the
McCarty's/Pacific Hide and Fur
Superfund Site
Final Operable Unit Record of Decision

Site

McCarty's/Pacific Hide and Fur
Pocatello, Bannock County, Idaho

Statement of Basis and Purpose

This decision document presents the selected remedial action for soil and scrap material contaminated with lead remaining at the McCarty's/Pacific Hide and Fur Site (the "Site") in Pocatello, Bannock County, Idaho. This record of decision (ROD) has been developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), 42 U.S.C. §9601 et seq., and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. This decision is based on the Administrative Record (AR) for this Site, updated in July 1995, to include new information generated since both the original ROD, signed on June 28, 1988, and the Amended ROD, signed on April 29, 1992. The attached index identifies the items in the AR upon which this decision is based.

The State of Idaho concurs with the selected remedy.

Assessment of the Site

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial threat to human health, welfare, or the environment.

Description of the Final Operable Unit Remedy

This operable unit is the second of two operable units for this Site. The first operable unit involved remediation of soil and scrap material contaminated with polychlorinated biphenyls (PCBs) and commingled PCBs and lead.

This final operable unit addresses remediation of the remaining soil and scrap material contaminated with lead. The selected remedial action addresses all threats associated with lead-contaminated soil and scrap material above lead health-based levels under a future industrial land use scenario. Extensive analyses conducted on samples from ground-water monitoring wells located both on- and off-Site have not indicated the presence of

lead or other contaminants at harmful levels. Therefore, ground-water cleanup is deemed unnecessary and is not a component of this operable unit remedial action.

The major components of the selected remedy include:

- Decontaminating and recycling contaminated scrap material and, site preparation in anticipation of remedial activities;

- Excavating all lead-contaminated soil above the Site-specific cleanup level;

- Treating soil which has been designated as a Resource Conservation and Recovery Act- (RCRA) characteristic waste;

- Properly disposing of both the non-treated and treated soil at a permitted, municipal landfill (operated under 40 CFR 258);

- Backfilling excavated areas with clean soil from off-Site, grading and restoring surface drainage;

- Implementing supplementary engineering controls and environmental monitoring, such as air monitoring, to minimize exposure to releases of hazardous substances during cleanup activities;

- Performing one year of quarterly ground-water monitoring to ensure the effectiveness of the cleanup and that no contaminants were mobilized during its implementation, followed by monitoring well abandonment;

- Requiring institutional controls including permanent Site fencing and restrictions limiting future property usage to industrial operations only. These restrictions will prohibit land uses allowed under residential/neighborhood commercial and professional zoning.

- Long-term operation and maintenance requirements including fence repair, as necessary. Reviews conducted no less often than every five (5) years to ensure the remedy continues to provide adequate protection of human health and the environment.

Because this remedy will result in hazardous substances remaining at the Site above health-based levels, reviews will be conducted no less often than every five (5) years following initiation of the remedial action to ensure the remedy continues to provide adequate protection of human health and the environment.

Declaration

This operable unit remedial action is protective of human health and the environment, complies with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost effective. This action utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable and satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element.

for Charles Findley

Chuck Clarke
Regional Administrator
U.S. Environmental Protection Agency, Region 10

9-27-95
Date

- Requiring institutional controls including permanent Site fencing and restrictions limiting future property usage to industrial operations only. These restrictions will prohibit land uses allowed under residential/neighborhood commercial and professional zoning.

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_____ _____

Chuck Clarke Date
Regional Administrator
U.S. Environmental Protection Agency, Region 10

CONCURRENCE

INITIAL						
NAME	WILLIAMSON	GLASSER	OESTERLE	KOWALSKI	GEARHEARD	SMITH
DATE	9/25/95	9/25/95	9-26-95	9/26/95	9-25-95	9/27/95

MCCARTY'S/PACIFIC HIDE AND FUR
SUPERFUND SITE

RECORD OF DECISION
DECISION SUMMARY

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Decision Summary

INTRODUCTION

Site Name, Location and Description:

The McCarty's/Pacific Hide and Fur Superfund Site consists of approximately seventeen (17) acres located in the southern half of Section 16, Township 6 South, Range 34 East of the Boise Meridian, Bannock County, Idaho. The Site is situated at the northwestern edge of Pocatello, Idaho at 3500 U.S. Highway 30 West. A vicinity map is shown in Figure 1.

The Site is comprised of three contiguous properties including the McCarty property, the Pacific Recycling facility (owned and operated by Pacific Hide & Fur Depot, Inc.) and a portion of the Union Pacific Railroad (UPRR) property currently leased to Pacific Recycling. Current land use at the Site includes an operating scrap yard and vacant property on which scrap operations were formerly conducted. The Site is located in an industrial corridor along U.S. Highway 30 West. Several residences are located within 0.3 mile of the Site.

Lead and Support Agencies:

The U.S. Environmental Protection Agency (EPA) is the lead agency for this Superfund Site. The State of Idaho, through the Idaho Division of Environmental Quality (IDEQ), has reviewed and concurs with the response activities planned at the Site.

Administrative Record:

This ROD is based on the Administrative Record (AR) for this Site and will become part of the AR file, in accordance with §300.825(a)(2) of the NCP. The AR is available for review at the EPA Regional Office, 1200 Sixth Avenue, Seattle, Washington, and at the Pocatello Public Library, 812 East Clark Street, Pocatello, Idaho. An index of the AR is included with this record of decision (ROD).

Highlights of Community Participation:

Community relations efforts prior to June 28, 1988 and between June 28, 1988 and April 29, 1992, are described in the Community Relations sections of the original and amended RODs for

the first operable unit, respectively. The following community relations activities are relevant to this ROD:

October 31, 1994- November 30, 1994	The public comment period for the final operable unit Proposed Plan. The Proposed Plan was released to the public on October 26, 1994. Copies were mailed to over seventy-five (75) interested parties on the community relations mailing list. A display ad was placed in the Idaho State Journal newspaper describing the proposed cleanup plan and the dates of the public comment period. Citizens were asked to contact the EPA project manager to request a public meeting to discuss the proposed alternatives for cleanup of the remaining lead contamination at the Site.
December 1, 1994	Public comment period extended an additional thirty (30 days) after EPA received a formal request for an extension. A display ad was placed in the Idaho State Journal newspaper describing the extension to the public comment period. The public comment period was extended through December 31, 1994. Substantial written comments were submitted to EPA during the public comment period. A response to the public comments is included in the Responsiveness Summary, which is attached to this ROD as Appendix A.

SITE HISTORY

The McCarty property was used as part of a gravel mining operation as early as 1949. The property was later used as a metal salvaging yard from the late 1950's to 1983. Scrap metal was bought and stored in and around a large gravel pit. Copper from transformers was removed and the casings scrapped. Residual oil, contaminated with PCBs, was apparently allowed to drain directly onto the ground. The capacitors were discarded directly into the pit because they had no value.

Lead-acid batteries were also brought to the McCarty, UPRR and Pacific Hide and Fur Depot, Inc., properties. In some locations, battery casings were mixed with metal scrap in layers up to four (4) feet thick. Lead in the batteries was sold for reprocessing. Acid staining and corrosion from battery acids has been observed in intermixed metal scrap recovered from the Site.

Former employees who worked at the Site have reported that batteries were cracked open, drained, and stored in four former railroad boxcars located on both the Pacific Hide and Fur Depot, Inc., and UPRR properties in the south central portion of the Site. These boxcars were not known to have been moved around on the Site during the time the recycling activities occurred. Battery acid was reportedly drained in an area southwest of the boxcars. The battery casings were either burned in a stove in the boxcars for heat, shipped off the Site with the lead, or dumped on the McCarty property.

Recycling operations on the McCarty property were conducted by McCarty's, Inc., until 1979. In August 1979, Pacific Hide and Fur Depot, Inc. (dba Pacific Recycling) purchased the northwest section of the McCarty property and the right to engage in the recycling business in that area. Pacific Recycling continued to operate on the McCarty property until March 1983. Pacific Recycling operates a recycling business on its property and property currently leased from UPRR.

ENFORCEMENT ACTIVITIES

EPA conducted an Emergency Removal Action at the Site in March 1983. Over 500 capacitors and 100 cubic yards of PCB-contaminated surface soil were removed and disposed off-Site. Also, in March 1983, the United States Department of Justice (DOJ), acting on behalf of EPA, filed both a civil and a criminal action based on contamination discovered at the Site. The criminal action was brought against Pacific Hide and Fur Depot, Inc., and several of its employees, for alleged violations of the Toxics Substances Control Act. Convictions were entered in the criminal case on June 29, 1984. The verdicts were subsequently overturned by the Ninth Circuit in United States v. Pacific Hide & Fur, 768 F.2d 1096 (9th Cir. 1985), based on an improper jury instruction. The civil action, which was subsequently stayed pending resolution of the criminal suit, was brought against Pacific Hide and Fur Depot, Inc., McCarty's, Inc., and individual members of the McCarty family.

In September 1984, the Site was added to the National Priorities List under CERCLA.

In March 1985, the United States renewed prosecution of the civil action. Pacific Hide and Fur Depot, Inc., subsequently named Idaho Power Company (IPCo) as a third party defendant. IPCo had owned many of the transformers and capacitors that had been brought to the Site. DOJ filed an Amended Complaint, identifying IPCo as an additional defendant.

On September 9, 1986, IPCo, McCarty's, Inc., members of the McCarty family, Pacific Hide and Fur Depot, Inc., and EPA entered into a Partial Consent Decree in which the defendants agreed to

conduct a remedial investigation and feasibility study (RI/FS) of PCB contamination at the Site. The completed RI/FS was submitted to EPA for approval on March 9, 1988. The ROD was signed on June 28, 1988.

In July 1988, special notice letters were sent to Pacific Hide and Fur Depot, Inc., McCarty's, Inc., members of the McCarty family and IPCo, all of whom had been identified as potentially responsible parties (PRPs). The special notice letters initiated negotiations on a PRP-lead remedial design/remedial action (RD/RA). IPCo and EPA subsequently entered into a consent decree in which IPCo agreed to complete the RD, implement the RA, reimburse EPA for a portion of the past costs incurred by the government, and fund three years of operation and maintenance. This consent decree was lodged on May 30, 1989, and became effective on September 25, 1989. At that time, PCBs were the only hazardous substances known to be present above regulatory limits.

Subsequent to entry of the Partial Consent Decree, but prior to IPCo's completion of the design work for the remedial alternative, EPA discovered lead at the Site at concentrations in excess of recommended action levels. EPA determined that the selected PCB remedial alternative would not be protective. All PCB remedial activities were stopped. IPCo agreed to complete a feasibility study to evaluate remedial alternatives for cleanup of both PCBs and PCBs commingled with lead.

An investigation to identify PRPs who may be potential sources of the lead contamination was completed by EPA in December 1991. Letters were sent to several identified PRPs to notify them of their potential liability, obtain additional information, and seek their cooperation in undertaking and financing further investigation and possible future cleanup.

On April 29, 1992, EPA issued an Amended ROD. The Amended ROD identified the selected remedial alternative for PCBs and PCBs commingled with lead and other inorganic contaminants. IPCo and EPA negotiated an Amended Partial Consent Decree. EPA subsequently issued an Administrative Order for RD/RA to enable IPCo to promptly initiate cleanup of PCBs and PCBs commingled with lead pending judicial entry of the Amended Partial Consent Decree.

The Amended Partial Consent Decree was lodged with the Idaho District Court (Court) on August 17, 1993. Substantial public comments objecting to entry of the Amended Partial Consent Decree were received from the parties who had been identified as PRPs for the lead contamination. Following consideration of the comments, the United States moved for entry of the Amended Partial Consent Decree on December 23, 1994. The parties who had submitted public comments filed formal objections with the Court,

requesting that the Court not enter the Amended Partial Consent Decree.

Immediately following discovery of the lead contamination, EPA began collecting information concerning the delivery and processing of lead batteries at the Site. Receipts obtained from McCarty's, Inc., and Pacific Recycling disclosed ten (10) major battery contributors.

In December 1992, EPA issued special notice letters to the 10 identified lead generators and the owners/operators of the Site (Pacific Hide and Fur Depot, Inc., UPRR, McCarty's Inc., and the McCarty entities). Subsequent negotiations for completion of an RI/FS for the lead contamination were unsuccessful. Thus, EPA retained a contractor to conduct the RI/FS. The Proposed Plan was issued in October 1994. EPA re-evaluated the proposed remedy as a result of comments received during the public comment period. EPA's response to these comments appears in the Responsiveness Summary of this ROD. Negotiations for implementation of the selected remedial alternative will commence shortly after the ROD is signed.

SCOPE AND ROLE OF THE OPERABLE UNIT REMEDIAL ACTION

Following discovery of the lead contamination, EPA divided the Site into two operable units to expedite cleanup activities. The first operable unit addressed cleanup of the PCB- and commingled PCB/lead-contaminated soil. A comprehensive discussion of the selected remedial action for the first operable unit cleanup is included in the April 29, 1992 Amended ROD. The first operable unit cleanup was completed in October 1993.

The second operable unit addresses the remaining lead-contaminated soil at the Site. EPA has determined that lead concentrations greater than 1,000 parts per million (ppm) may present significant human health risks for Site workers. Approximately 6,510 cubic yards of lead-contaminated soil remaining at the Site exceed the 1,000 ppm level. Approximately 3,015 cubic yards of the 6,510 cubic yards of lead-contaminated soil must be treated prior to disposal because it exceeds the RCRA toxicity characteristic leachate procedure (TCLP) extraction test level of 5 ppm. The TCLP test was used at this Site on lead-contaminated soil to determine its mobility. The lead-contaminated soil is considered to be the principal threat waste at this Site because of the possible ingestion of soil that contains lead above health-based levels.

The second operable unit remedial action is intended to be the final response action for this Site. Extensive sampling of ground-water monitoring wells located on- and off-Site, has not indicated the presence of lead or other contaminants at harmful levels. Therefore, ground-water cleanup is deemed unnecessary

and is not a component of this final remedial action. However, one year of quarterly ground-water monitoring will be conducted to determine the effectiveness of the lead-contaminated soil cleanup and to ensure that no contaminants were accidentally mobilized during implementation of the selected remedy.

SUMMARY OF SITE CHARACTERISTICS

Extensive surface and subsurface soil sampling was performed prior to and after the first operable unit cleanup to identify contaminants of concern and characterize the nature and extent of contamination. Surface and subsurface soil sample analyses included the use of x-ray fluorescence (XRF) field screening for lead and other selected elements, and laboratory confirmation sampling for target analyte list compounds. Laboratory confirmation sampling analyses were also conducted for semivolatile organic compounds in surface soil samples. All on-Site sample data were compared to risk-based criteria, and on-Site inorganics sample data were compared to off-Site background data, to determine contaminants of potential concern.

A sampling grid was established for samples collected during the August 1990, May 1991, and final operable unit RI sampling events. Various sampling intervals were used during the multiple investigations at the Site; however, all sample location coordinates, including samples collected during the RI field investigation were placed on a grid of the Site.

A soil sample collection summary is presented in Table 1 beginning with sampling events conducted in August 1990 and May 1991, and including results from the first operable unit remedial action confirmation sampling and the final operable unit RI. Tables 2 (surface soil) and 3 (subsurface soil) summarize the potential contaminants of concern, maximum detected concentrations, background (surface) soil concentrations, and risk-based criteria for each analyte. Additionally, these tables include the number of samples that exceed background concentrations or risk-based criteria compared to the total number of samples collected for each respective compound. With the exception of lead, the risk-based screening criteria which were used for both the residential and industrial scenarios were those developed by EPA Region III (*Risk-Based Concentration Tables, Second Quarter 1994, Region III, April 20, 1994*). For lead, the 400 ppm residential screening level was used.

Subsurface soil XRF screening data for lead collected during the May 1991 field investigation are available for several areas on the Site in addition to laboratory analytical data. These data were used to complement the laboratory analytical data and further characterize the nature and extent of subsurface soil contamination at the Site. Subsurface XRF screening data that were collected within the boundary of the first operable unit

remedial action have been excluded because they are no longer representative of current Site conditions.

The data comparison presented in Table 3 identifies two analytes, arsenic and lead, that exceed background and risk-based criteria at depth under a future residential land use scenario. Beryllium exceeds residential risk-based criteria at depth. However, under the current/future industrial land use scenario, lead is the only analyte that exceeds background and risk-based criteria.

Samples were collected for TCLP analyses at 14 locations identified during XRF screening as exhibiting lead concentrations between 1,600 ppm and 28,600 ppm. Regression analysis was performed on data collected during the 1990 and 1991 sampling events. For the nine data pairs within the XRF calibration range (380 to 10,000 ppm), the laboratory analytical results for TCLP from unsieved soil samples and XRF measurements are marginally correlative (r^2 = .67). Although the correlation between the XRF measurements and TCLP values is insufficient to establish a prediction of TCLP leachate values from an XRF measurement, the data show that none of the samples with XRF lead measurements below 4,000 ppm exceeded the TCLP regulatory limit for lead (5 ppm). TCLP analysis also indicated that no metals, other than lead, exceeded RCRA criteria.

TCLP soil analyses were not performed during the RI because the TCLP results from the samples collected in 1990 and 1991 remain representative of Site soil characteristics.

EPA estimates that 7,330 cubic yards of lead-contaminated soil exceed EPA's recommended 400 ppm residential-based screening level; an estimate of 6,510 cubic yards of soil exceeds a level of 1,000 ppm. Other inorganic elements detected in Site surface soil in concentrations above background included antimony, arsenic, beryllium, cadmium, copper, manganese and zinc. These elements were not expected to result in exposures to workers that would exceed EPA's acceptable health-based levels. No semivolatile organic compounds were detected at levels of concern.

Surface soil contamination (from ground surface to 1 foot below ground surface) is pervasive across the Site except in those areas where extensive cleanup occurred under the first operable unit and on portions of the Pacific Hide and Fur Depot, Inc., property on which no known battery recycling operations were conducted. At depths to eight (8) feet below ground surface, areas exhibiting elevated lead concentrations are limited to the north central access road to the gravel pit on the McCarty property, the top of the east access road to the pit, and two localized areas east of the pit on the McCarty's property;

and the historical location of the former battery boxcars on the Pacific Hide and Fur Depot, Inc., and UPRR properties. Figure 2 depicts lead contamination at the Site at 400 ppm and 1,000 ppm concentration contour intervals, and subsurface locations where lead concentrations exceed 1,000 ppm.

Ground water beneath the Site occurs in two distinct water bearing deposits (upper and lower aquifers) separated by a less permeable clay layer. Under the Clean Water Act (CWA) (33 USC 1251, 40 CFR Part 230, 231), State Antidegradation Requirements/ Use Classification require every state to classify all the waters within its boundaries according to intended use. EPA has designated the upper aquifer as Class IIB since it is potentially available for drinking water, agriculture or other beneficial uses. The lower aquifer is Class I (i.e., drinking water). The lower aquifer is very productive and is used as the primary drinking water source by local, private residents, businesses, and the City of Pocatello (Supply Well No. 32). No water supply wells in the area have been found to utilize the upper aquifer. The Michaud Gravel through which the upper aquifer flows does not appear to be of sufficient saturated thickness to be used as a major ground-water source. Depth to ground water in the upper aquifer is between 34 to 38 feet below ground surface; and, within the lower aquifer, 60 to 150 feet below ground surface. Ground water in the upper aquifer flows to the northwest, and in the lower aquifer, to the west/northwest. Ground-water monitoring well locations for this Site are illustrated in Figure 3.

During early assessments of the Site, elevated concentrations of PCBs were found in ground-water monitoring and private wells in the vicinity of the Site. Multiple rounds of ground-water sampling have since been performed to identify any contaminants of concern and document trends in ground-water quality. Ground-water sampling began in 1983. Sampling performed prior to 1990 focused primarily on PCB contamination and did not address all potential contaminants of concern at the Site. Between 1990 and 1994, EPA performed seven rounds of ground-water sampling on up- and down-gradient monitoring wells in which samples were analyzed for all compounds on the target analyte and compound Lists, including metals, pesticides/PCBs, volatile organic compounds (VOCs), and semivolatile organic compounds.

The maximum detected inorganic concentrations in the shallow and deep aquifer wells for potential elements of concern are summarized in Table 4. Only those compounds which have either exceeded their risk-based screening levels or maximum contaminant levels (MCLs) are listed. None of the sample analyses for pesticides/PCBs or semivolatiles produced any exceedances of either MCLs or risk-based criteria. One VOC, trichloroethylene, exceeded its MCL once in one (1) on-Site monitoring well.

There are several inorganic analytes which exceed either MCLs or risk-based criteria including aluminum, antimony, arsenic, chromium, iron, lead, manganese, nickel, and zinc. In many instances, the exceedance occurred once and has not been replicated. With the exception of lead, these compounds have not been found in Site soil at levels of concern, and are, therefore, not considered contaminants of concern at the Site. Lead did exceed the federal action level of 15 ug/L in an up-gradient well at 43.8 ug/L and down-gradient well at 18 ug/L, as documented in the results from the March 1991 sampling event. However, these results are considered anomalous because no exceedances of the action level have been observed since the March 1991 sampling event. Based on the extensive ground-water monitoring database for this Site, EPA believes this Site does not pose a threat to ground water, and therefore, no ground-water remediation is deemed necessary. However, lead, in the more highly contaminated soil, may be leached or mobilized by rainwater infiltrating or spills from industrial Site activities. TCLP results demonstrate that lead-contaminated soil at the Site has the capacity to be leached fairly readily.

There are no observable impacts to surface water, sediments or air resulting from contaminants found at the Site.

The Site Characteristics - Remedial Investigation section in the original June 28, 1988 ROD, and the August 1991 "*Interpretive Report for XRF Screening and Confirmation Soil Sampling at McCarty's/Pacific Hide and Fur and Union Pacific Railroad*" provide a historical perspective of Site investigations done to characterize the nature and extent of contamination at the Site.

SUMMARY OF SITE RISKS

The baseline risk assessment provides the basis for taking action at the Site and indicates the exposure pathways that need to be addressed by the remedial action. Risk assessments are performed using information on the toxicity of contaminants and assumptions regarding the extent to which people may be exposed to them. This summary of the baseline Risk Assessment for the Site is divided into five sections: identification of potential contaminants of concern (COCs), exposure assessment, toxicity assessment, risk characterization, which is an integration and summary of the information gathered and analyzed in the preceding sections and analysis of the uncertainty involved in developing a risk assessment. The summary concludes with the results of the Ecological Risk Assessment conducted for this Site.

The October 1994 baseline Risk Assessment evaluated risk based on a future residential land use scenario. Upon further review, EPA determined that the reasonably anticipated future land use at the Site will be industrial, consequently, the

June 9, 1995 Risk Assessment addendum evaluated risk based on a future industrial land use scenario. The potentially exposed populations in current and potential scenarios are primarily on-Site workers.

Identification of Potential Contaminants of Concern (Screening Analysis)

The selection of chemicals that potentially contribute to human health risks at the Site, known as the potential COCs, was a two-step process. First, the maximum concentrations of contaminants detected in on-site soil and water were compared to health based screening levels for drinking water, soil and air developed by EPA Region III (*Risk-Based Concentration Tables, Second Quarter 1994, Region III, April 20, 1994*) and to EPA's MCLs. For lead, the health-based screening levels used for soil (400 ppm) and water (15 ug/l) were those recommended by EPA guidance. Those chemicals having concentrations above these screening levels were selected as potential COCs. Second, some of the potential COCs identified in this first step were eliminated from consideration as potential COCs by considering several factors including frequency of detection, calculated risk levels, and background concentrations (for inorganics).

The potential COCs selected for soil and Class IIB ground water (potential drinking water) shown in Table 5 were selected using exposure parameters based initially on residential use of the Site. Because EPA recommends that the residential scenario be used for the initial screening (i.e., the selection of potential COCs) for all risk assessments, the screening methods used and the potential COCs selected did not change with the addition of the industrial land use Risk Assessment in the June 1995 addendum.

Exposure Assessment

The exposure assessment estimates the type and magnitude of exposures to the potential COCs at the Site. It considers the current and potential future uses of the Site, characterizes the potentially exposed populations, identifies the important exposure pathways and quantifies the intake of each potential COC from each medium for each population at risk. The result of the assessment is a calculated daily dose of each potential COC per body weight for each exposure medium.

Identification of Site Uses, Exposed Populations and Exposure Pathways

(a) Site Use Scenarios. The exposure assessment for the Site considers two land use scenarios involving different groups of potentially exposed populations. The October 1994 baseline Risk Assessment considered future residential land use of the

Site. The June 1995 addendum considered current and expected future industrial land use of the Site.

(b) Potentially Exposed Populations. The two scenarios described above have an associated population that may be exposed to potential COCs at the Site. The populations assumed for these Site uses are described below.

(1) Residential. The Site would be developed for residential use. People would spend 30 years of their lifetime on the Site.

(2) Industrial. The Site would continue to be used for industrial purposes. Workers would spend 25 years of continuous employment at the Site.

(c) Exposure Pathways. An exposure pathway is the mechanism by which chemicals migrate from their source or point of release to the population at risk. Four elements comprise a complete exposure pathway: (1) a source of a chemical release (e.g., contaminated soil); (2) movement of contaminants through environmental media (e.g., rain moving through contaminated soil into ground water); (3) a point of potential human contact with a contaminated medium (e.g., use of contaminated ground water for drinking water); and, (4) entry into the body or exposure route (e.g., ingestion of drinking water).

The exposure pathways considered in the October 1994 baseline Risk Assessment and June 1995 Risk Assessment addendum varied depending on the land use and on the population potentially exposed. For example, in assuming future residential land use of the Site, the following exposures were evaluated for adults and children: (1) ingestion of soil, (2) ingestion of ground water, and (3) inhalation of vapor phase chemicals from ground water while showering. Exposure from contaminants in air as a result of the generation and transport of fugitive dust from surface soil was eliminated as an exposure route of concern during the initial screening for potential COCs. This was done by screening modeled air concentrations (derived from maximum surface soil concentrations) to the Region III risk-based values. Subsurface soils were evaluated as a part of the October 1994 baseline Risk Assessment to account for the possibility of future excavation. Excavation can result in subsurface soils being brought to the surface where contact by people can occur.

The results of the residential land use Risk Assessment showed that exposures from ground-water ingestion and inhalation of volatiles from ground water were below levels of concern for human health. Because exposures to workers via ground-water ingestion and inhalation of volatiles would be much lower than those for residents, the June 1995 Risk Assessment addendum done

for worker exposure evaluated only ingestion of contaminated soils.

The methods used to assess exposure and toxicity and to characterize risk are different for lead than for other contaminants. Therefore, lead is discussed separately from the other contaminants in the sections below.

A. Risks Related to Compounds Other Than Lead

Calculation of Exposure

EPA's Superfund guidance requires that the reasonable maximum exposure (RME) be used to calculate potential health impacts at Superfund sites. The RME is the highest exposure that is reasonably expected to occur at the site. It is calculated using conservative assumptions in order to represent exposures that are both reasonable and protective. In the October 1994 Risk Assessment, both RMEs and average exposures were estimated for the residential land use scenario and exposure pathways described above. Average exposures were calculated in order to represent exposures of a more typical person. In the June 1995 addendum, RMEs were estimated for the industrial land use scenario.

To estimate exposure, data on the concentrations of potential COCs in the media of concern at the Site (the exposure point concentrations) are combined with information about the projected behaviors and characteristics of the people who may potentially be exposed to these media (exposure parameters). These elements of the Site are described below.

(a) Exposure Point Concentrations (EPCs). For the October 1994 Risk Assessment (using a residential scenario), individual surface and subsurface soil sample results for each sampling location were used as EPCs for both the RME and average exposure calculations. This was done because the density of soil samples was insufficient to calculate either an upper confidence limit on the average (for the RME) or an average (for the average) as an EPC for a residential lot. Therefore, the reported concentration is the EPC for that sample grid node location. Average EPCs were calculated at locations at which duplicate samples were collected. If a potential COC was not detected or if the detected concentration was less than the background concentration for inorganic analyses at a particular location, an EPC was not derived for that location. Tables 2-7 through 2-9 in the October 1994 baseline Risk Assessment contain the EPCs for carcinogenic and non-carcinogenic potential COCs in surface and subsurface soil at the Site.

In the June 1995 addendum, Site-wide EPCs for industrial exposures to soil were generated. The Site-wide EPC calculation

was used because the exposure area was assumed to be larger than a residential lot. Site-wide EPCs were calculated for the McCarty's, Inc. property separately, and for the UPRR and Pacific Hide and Fur Depot, Inc. properties combined. Where greater than ten (10) data points were available, the 95 percent upper confidence limit on the mean was used as the EPC to calculate the RME. If less than 10 data points were available, then the maximum detected concentration was used as the EPC for the RME.

(b) Exposure Parameters. The parameters used to calculate the RME include body weight, age, contact rate, frequency of exposure and exposure duration. Exposure parameters were obtained from EPA Region 10 risk assessment guidance (*EPA Region 10 Supplemental Risk Assessment Guidance for Superfund, EPA 1991a*).

For all of the media, exposures were estimated assuming long-term exposures to Site contaminants (e.g., under the residential scenario: 24 years of daily use for an adult resident, 6 years for a child resident, and 350 days/year; under the industrial scenario: 25 years for an adult worker, 250 days/year, 5 days/week, and 8 hours/day).

Table 6 shows the residential and industrial soil ingestion exposure factors (including exposure frequency and duration) which are provided in EPA Region 10 risk assessment guidance.

Toxicity Assessment

The purpose of the toxicity assessment is to provide, where possible, an estimate of the relationship between the extent of exposure to a contaminant and the increased likelihood and/or severity of adverse effects. This is done by weighing available evidence regarding the potential for particular contaminants to cause adverse effects in exposed individuals.

EPA has conducted toxicity assessments for many chemicals and publishes the resulting values, slope factors (Sfs) and reference doses (RfDs), on the Integrated Risk Information System (IRIS) or in the Health Effects Assessment Summary Tables (HEAST). IRIS and HEAST were used as a source for Sfs and RfDs for this Risk Assessment.

Sfs have been developed for estimating upper-bound excess lifetime cancer risks associated with exposure to potential cancer-causing chemicals. They are expressed in units of the inverse of milligrams per kilogram of body weight per day $(mg/kg\text{-}day)^{-1}$. Sfs are derived from the results of human epidemiological studies or chronic animal bioassays to which mathematical extrapolations from high to low dose and from animal to human have been applied.

RfDs have been developed to indicate the potential for adverse health effects from ingestion of COCs that exhibit non-cancer effects, such as damage to organ systems (e.g., the nervous system, blood forming system, etc.) and learning disabilities. They are expressed in units of mg/kg-day. RfDs are estimates within an order of magnitude, of lifetime daily exposure levels for people, including sensitive individuals, that are likely to be without risk of adverse effect.

Risk Characterization

The purpose of the risk characterization is to integrate the results of the exposure assessment and the toxicity assessment to estimate risk to humans from exposure to Site contaminants.

To estimate cancer risk, the Sf is multiplied by the exposure expected for that chemical to provide an upper-bound estimate of the excess lifetime cancer risk. This estimate is the incremental probability of an individual developing cancer over a lifetime as a result of exposure to cancer-causing chemicals at a site. For example, an excess lifetime cancer risk of 1×10^{-6} indicates that, as a reasonable maximum estimate, an individual has an excess 1 in 1,000,000 chance of developing cancer as a result of site-related exposure to a carcinogen over a 70-year lifetime under the specific exposure conditions at a site.

In defining effects from exposure to noncancer-causing contaminants, EPA considers acceptable exposure levels as those which do not adversely affect humans over their expected lifetime with a built-in margin of safety. Potential concern for noncarcinogenic effects of a single contaminant in a single medium is expressed as a hazard quotient (HQ) which is the ratio of the estimated exposure from a site contaminant to that contaminant's RfD. As exposures increase above the RfD (i.e., as the HQ goes above 1), the likelihood for non-cancer health impacts also increases. By adding the HQs for all contaminants within a medium or across all media to which a given population may reasonably be exposed, the hazard index (HI) can be generated. The HI provides a useful reference point for gauging the potential significance of multiple contaminant exposures within a single medium or across media.

Figures 4 and 5 depict the estimated upper-bound cancer risks and HIs for Site soil assuming future residential land use using RME (Figure 4) and average exposure (Figure 5) assumptions. As shown on Figure 4 (RME assumptions), cancer risk estimates for most individual sample points were between 1×10^{-6} and 1×10^{-4}. Only two sample points had contaminant levels resulting in estimated cancer risks above 1×10^{-4}. As discussed in the October 1994 Risk Assessment, arsenic was the primary COC at most

surface soil locations. Polynuclear aromatic hydrocarbons also impacted risk.

The HI, which is the sum of the HQs of all of the COCs detected at a given soil sampling point, was greater than one (1) at several sample locations as shown on Figures 4 and 5. All of these exceedances are below a value of 10. These non-cancer risks are a result of elevated levels of antimony, arsenic, cadmium, copper and manganese in the soil.

Table 7 presents the cancer risks, hazard quotients, and hazard indices for soil ingestion under a RME future industrial land use scenario.

As can be seen in Table 7, the contaminants at the Site which yielded excess lifetime cancer risks to workers greater than 1×10^{-6} assuming industrial exposure were arsenic and dibenz(a,h)anthracene. Potential excess lifetime cancer risks associated with industrial exposure to all contaminants in surface soil at the Site were 7×10^{-6} on the McCarty property; and, 1×10^{-5} for the UPRR and Pacific Hide and Fur Depot, Inc. properties combined. These risk estimates are within EPA's acceptable risk range of 1×10^{-4} to 1×10^{-6}.

B. Risks Related to Lead Only

There is a large body of scientific literature on the toxicological effects of lead in humans. Children appear to be the segment of the population at greatest risk from the toxic effects of lead. Health impacts from lead are primarily assessed by using levels of lead in blood. At blood lead levels of 40 to 100 micrograms per deciliter (ug/dL), children have exhibited nerve damage, permanent mental retardation, colic, anemia, brain damage, and death. Blood lead levels as low as 10 ug/dL (or lower) have been associated with neurological and developmental defects in children. Blood lead levels of concern for adults are generally higher than for children. However, studies examining the relationship between lead exposure and blood pressure suggest that blood lead levels from as low as 7 ug/dL upward to approximately 30 or 40 ug/dL may increase blood pressure. In addition, studies suggest that low levels of exposure for pregnant women may increase the risk for developmental effects in the unborn child.

Lead was not included in the quantitative risk estimates described above for the other Site contaminants because: (1) EPA-approved RfDs and Sfs are unavailable, and (2) for the residential exposure, EPA guidelines specify the use of the EPA Integrated Uptake Biokinetic (IUBK) model for estimating acceptable lead levels in soil for children.

The IUBK model estimates the blood lead concentrations expected to result from exposure to lead concentrations in soil and other media (e.g., air, water, diet, dust, and paint) for children. EPA recommends a benchmark of either 95% of the sensitive population of children having blood lead levels below 10 ug/dL or a 95% probability of an individual child having a blood lead level below 10 ug/dL. When the IUBK model is run using this benchmark and all the model's default parameters, an acceptable soil level of about 400 ppm is predicted for lead.

The IUBK model does not address lead exposure to older children or adults. Therefore, potential risks associated with exposures of adult residents and workers could not be quantitatively evaluated using the IUBK model. However, the exposure potential and sensitivity of older receptors are generally lower than those of young children. To assess the impacts of lead on workers, a 1,000 ppm soil lead level was chosen as protective. This level has been used in the past for sites when the expected future land use is industrial.

Health impacts for lead were characterized by comparing the exposure point concentrations calculated for lead in soil at the Site using the methods discussed in the exposure assessment for other Site contaminants, to 400 ppm (for residential exposures) in the October 1994 Risk Assessment, and to 1,000 ppm (for industrial exposures) in the June 1995 Risk Assessment addendum. In both cases, risks associated with either residential or industrial exposures to the elevated concentrations of lead in Site soil were determined to present significant risks to human health. Therefore, a cleanup action to address the lead-contaminated soil at the Site is considered warranted.

Uncertainty Analysis

The numerical results of a risk assessment (HQs and cancer risk values) are uncertain because of limitations in knowledge regarding exposure and toxicity. Where information is incomplete, assumptions must be made: the greater the uncertainty, the more conservative the assumptions to be protective of public health. Even when actual characteristics of a population are known, selected exposure parameters are biased toward overestimating rather than underestimating risk for the majority of the population.

There were several general factors which were considered in the uncertainty analysis. First, inherent variability exists in all analytical results. This variability or uncertainty in the true result is dependent upon several factors, including the sample matrix, analytical method, and the particular analytical laboratory performing the analysis. Secondly, samples collected during the field investigations were intended to characterize the nature and extent of the remaining contamination at the Site.

Samples collected in this manner provide considerable information about the Site but are not statistically representative of the contamination that may be present on the Site as a whole. Thirdly, although not all chemicals detected in environmental media at the Site were selected as potential contaminants of concern, the Risk Assessment approach was sufficiently conservative such that any of the chemicals excluded during the screening process were considered unlikely to pose a significant human health risk.

The toxicity assessment process compensates for the basic uncertainties associated with calculating carcinogenic and noncarcinogenic effects. This compensation is done through the use of safety factors (uncertainty factors) and modifying factors when assessing noncarcinogens, and the use of the upper 95th percent confidence limit from the linearized multistage model for the slope factor when assessing carcinogens. The use of the safety factors and the upper 95th percent confidence limit in deriving the RfDs and Sfs, respectively, ensures that the toxicity values used in the risk estimation process are unlikely to underestimate the true toxicity of a chemical.

A discussion is presented below on how specific uncertainties in the risk assessment process might overestimate or underestimate risk.

Some of the factors which might have led to a possible **overestimation** of risk are as follows:

(1) The exposure assessment calculations assumed that the concentrations of chemicals in the affected media are at steady state (i.e., remain constant for the duration of the exposure period which is 30 years in this assessment). This may be true for most inorganics in soil, however this assumption may not be appropriate if contaminants are mobile or if they degrade in the environment. Additionally, the Risk Assessment assumed that 100 percent of contaminants associated with the affected media were bioavailable, however, the bioavailability of most chemicals in most media is likely less than 100 percent.

(2) The exposure assumptions used for the residential exposure are conservative ones (e.g., living on the Site for 30 years, 24 hours a day and 250 days per year) to provide a health-protective assessment for the Site, in accordance with Region 10 risk assessment guidance. Actual risks for future residents may be much lower than estimated by these assumptions.

In addition, based on comments received during the public comment period on the Proposed Plan for the Site, EPA reconsidered the likelihood of the properties shifting from current industrial use to residential use in the future and found the possibility to be remote. The properties have been used for

industrial purposes for the past 50 years; the properties are zoned industrial, and are located in an industrial corridor.

(3) Exposures to subsurface soil on the Site will probably be limited to workers during remediation activities, however, this scenario represents a health-protective assessment. Actual risks associated with exposure to subsurface soil may be much lower than estimated for this scenario.

Conversely, there are factors which might have led to a possible **underestimation** of risk. Some of these factors are as follows:

(1) Although the RI included an investigation of all areas where Site-related chemicals were suspected because of past activities, the entire Site was not sampled potentially resulting in an underestimation of total Site risks.

(2) Some of the analytical detection limits that were used in the Risk Assessment were higher than the analytes' risk-based screening concentrations. The use of such analytical detection limits could allow potentially hazardous concentrations of some chemicals to go undetected.

(3) Exposure point concentrations were calculated to reflect Site-related risks only and not risks where detected concentrations were less than naturally occurring background concentrations of potential inorganic contaminants of concern. As a result, the risks calculated do not represent overall risks; rather, they represent the maximum possible risks attributable to Site contaminants.

For more detail regarding uncertainty, see Sections 2.1.7, 2.2.5, 2.3.2 and 2.4.3 of the October 1994 Risk Assessment.

Ecological Risk Assessment

The Ecological Risk Assessment evaluated the potential ecological impacts associated with chemical contamination in the surface soil and ground water at the Site.

Within the screening level of this Risk Assessment, six inorganic contaminant concentrations in ground water exceeded ecological risk-based screening concentrations. Of these, iron and total chromium were the principal contaminants of potential concern. However, the nearest location at which potential exposures to ground water could occur for ecological receptors is the Portneuf River, approximately 1,100 feet to the west of the Site. At this distance, the concentrations of these compounds would be expected to decrease due to dilution and attenuation resulting in minimal risks to aquatic species.

In soil, the potential ecological risks were attributable to inorganic contaminants. Copper, lead, and zinc exceeded risk-based concentrations for vegetation and soil invertebrates by 100-fold, or greater. Cadmium, mercury, and nickel exceeded risk-based concentrations for either vegetation or soil invertebrates, or both, by 10-fold or greater. Organic compounds were detected in soil below all available risk-based concentrations.

The concentrations of inorganic contaminants may be sufficiently high in the surface soil to limit the growth of vegetation and the soil invertebrate populations at the Site. Lack of habitat limits the populations of other species which may inhabit the Site. Therefore, the high concentrations of inorganic contaminants in the soil are not expected to affect small mammal or bird populations because exposure of species at the Site is limited.

In summary, the Ecological Risk Assessment determined that there is very limited potential for adverse impacts to either plant growth or animal survival, and there is little potential for Site-related adverse effects on water life in the Portneuf River.

There are no critical habitats affected by the contamination and there are no endangered species or habitats of endangered species affected by Site contamination.

Risk Assessment Conclusion

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial threat to human health, welfare, or the environment.

EPA's Cleanup Objectives

The overall goal of a remedial action is to provide the most effective mechanism for protecting human health and the environment from contaminated media associated with a site. To facilitate selection of the most appropriate remedial action, Site-specific cleanup objectives that specify the contaminants of concern in each medium of interest, exposure pathways and receptors, and an acceptable contaminant level or range of levels that is protective of human health and the environment, have been developed.

Cleanup actions are deemed necessary at the Site because conditions there pose unacceptable long-term risks for current and future workers. EPA's objectives for the cleanup are presented below. The performance standards for the selected remedy are found on pages 41-42 of the ROD.

The cleanup objectives will be accomplished by removing the lead-contaminated soil in order to minimize exposure to contamination via direct contact, and therefore, further reduce Site risks.

CLEANUP OBJECTIVES				
Environmental Media	Chemicals of Concern	Exposure Routes	Receptors	Cleanup Objectives
Soil and Dust	Lead	Human exposure through the incidental ingestion of soil and resuspended dust.	Humans	Prevent ingestion of contaminated soil and dust at lead levels above 1,000 ppm.
		Infiltration of soil contaminants to ground water and subsequent exposure to humans via the exposure routes for ground water.		Prevent infiltration/migration of contaminants in soil to ground water that would result in ground-water contamination in excess of the federal action level.
Ground Water	Lead	Ingestion		Prevent ingestion of ground water having contaminant concentrations above the federal action level.

KEY FEATURES AND APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS COMMON TO ALL ALTERNATIVES

Remedial actions must comply with all legally applicable or relevant and appropriate federal and state requirements (ARARs). RCRA requirements pertaining to defining and characterizing hazardous waste, land disposal restrictions, and generator and transporter requirements are fundamental to all of the cleanup alternatives (with the exception of the "Ground-Water Monitoring and Property Restrictions" alternative).

Key features of the remedy and a comprehensive discussion of the ARARs that are common to all of the alternatives (except the "Ground-Water Monitoring and Property Restrictions" alternative or as indicated) are as follows:

* Lead is the principal contaminant of concern of this operable unit remedial action. Although no federal or state chemical-specific ARARs exist for lead in soil,

there is To-Be-Considered (TBC) guidance[1] which was utilized to determine protectiveness under a future residential land use scenario. EPA's *Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities* (Office of Solid Waste and Emergency Response [OSWER] Directive No. 9355.4-12; EPA 1994) establishes a residential "screening level" of 400 ppm, above which further study is warranted (i.e., in the form of a site-specific risk assessment, which was conducted for the Site).

Cleanup goals at sites with lead contamination have typically been based on a residential cleanup goal range of 500 to 1,000 ppm quoted from previous EPA guidance. This guidance has since been superseded. Current EPA guidance, identified in the preceding paragraph, suggests considering the results from EPA's IUBK model as well as other factors including costs of remedial options, reliability of institutional controls, technical feasibility, and/or community acceptance to establish cleanup levels.

In the Proposed Plan issued for public comment on October 26, 1994, EPA recommended a Site-specific lead cleanup level of 400 ppm based on future residential land use. Upon further consideration, EPA has set the final lead cleanup level at 1,000 ppm based on current and future industrial (rather than residential) land use. The 1,000 ppm cleanup level is sufficiently protective for on-site workers, and has been used in the past for sites where the expected future land use is industrial. This is consistent with the present and anticipated future land use scenario for this Site and with the cleanup goals that were designated for the PCB- and commingled PCB/lead-contaminated soil operable unit cleanup completed in 1992. Furthermore, property restrictions will be implemented to restrict future land use to industrial operations only. Reviews will be conducted no less often than every five (5) years to ensure the remedy continues to provide adequate protection of human health and the environment.

* For soil failing TCLP, off-Site treatment and disposal must meet all applicable regulations including RCRA requirements for defining, characterizing and listing hazardous waste (40 CFR 261), land disposal restrictions (40 CFR 268) and EPA's Off-Site Disposal

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[1]TBCs are non-promulgated advisories, criteria, or guidance issued by federal or state governments that are not legally enforceable standards.

Rule (40 CFR 300.440). Any off-Site transportation of RCRA-characteristic soil must comply with RCRA hazardous waste manifesting and transporter requirements (40 CFR 262 subpart B and 40 CFR 263), the Department of Transportation Hazardous Materials Regulations which address shipment of any hazardous material off-site, all relevant Idaho Codes and Supplements Sections 67-2929, 2930 (Supplement 1988) and 49-2201 through 2212, and the Idaho Hazardous Waste Management Regulations (IHWMR) Section 16.01.05006 and 16.01.05007.

* Scrap material that is not being recycled as part of the operating Pacific Recycling business and which does not interfere with remedial activities, will be decontaminated, relocated and recycled. Following decontamination the property owner(s) will be allowed to store the material in an area on their respective properties which is below the 1,000 ppm cleanup level for lead in soil.

* Each alternative requires excavation of contaminated soils on-Site by conventional and protective methods. During these activities, air monitoring will be conducted and dust suppressive measures will be utilized to control the release of dust and particulates. These measures will comply with the applicable federal Clean Air Act requirements (40 CFR 42.21 and 50) and the Idaho Rules and Regulations for the Control of Air Pollution in Idaho (IDAPA 16.01650-.01651, et seq., 16.01.01585-.01586, and 16.01.01200). Pocatello is a federal nonattainment area for particulate matter (PM_{10}). Dust control measures must be implemented to prevent remedial activities at the Site from causing or contributing to a violation of the national ambient air quality standards and Idaho state standards.

* Occupational Safety and Health Act (OSHA) requirements (29 CFR Part 1910 and 1926) pertain to workers engaged in response or other hazardous waste operations. Excavation of the lead-contaminated soils is considered a hazardous waste operation at this Site. Although this regulation is not an ARAR, remedial workers must comply with these OSHA requirements.

* EPA is requiring one year of quarterly ground-water monitoring (with the exception of the "Ground-Water Monitoring and Property Restrictions" and the on-Site containment/fixation alternatives which each require 30 years of monitoring). Under the National Primary

Drinking Water Regulation, Control of Lead and Copper (40 CFR 141.80), the federal action level for lead at the consumer's tap is 15 parts per billion. Under Superfund policy, this federal action level is relevant and appropriate as the cleanup standard for ground water beneath the Site.

- Selected institutional controls will be used to prevent exposure to contaminants remaining at the Site at concentrations above health risk levels. Implementation of the controls will assure that the remedy is protective of human health and the environment. The controls will include installation and maintenance of access restrictions (i.e., security fences to prevent unauthorized access to non-workers). In addition, land use restrictions will be required limiting future property usage to industrial operations only. These restrictions will prohibit land uses allowed under residential/neighborhood commercial and professional zoning. These controls will be implemented no later than completion of the remedial construction activities.

DESCRIPTION OF FINAL OPERABLE UNIT REMEDIAL ALTERNATIVES

EPA considered the following seven (7) cleanup alternatives to address the remaining contamination at the Site:

Alternative 1 - Ground-Water Monitoring & Property Restrictions
Alternative 2A - Limited Soil Removal/Soil Cap
Alternative 2B - Limited Soil Removal/Pavement Cap
Alternative 3A - Off-Site Disposal of All Surface Soil
Alternative 3B - Off-Site Disposal of Surface/Subsurface Soil
Alternative 4 - Soil Washing
Alternative 5 - On-Site Fixation/Containment

Although the FS identifies a "No Action" alternative (Alternative 1 above), it requires long-term ground-water monitoring and property restrictions. By definition, this alternative is not a "No Action" alternative. A "No Action" alternative involves no treatment, engineering controls or institutional controls. Even though ground-water monitoring and property restrictions are required under this alternative, EPA did not evaluate this alternative as a viable cleanup option for this Site, given the limited extent and nature of the actions it requires. Alternatives 2 through 5 provide varying degrees of protection of human health and the environment. All of the alternatives (except Alternative 1) involve treatment of some of the lead-contaminated soil prior to off-Site disposal. A comprehensive assessment of these alternatives against EPA's nine evaluation criteria begins on page 34 of this document.

Common elements to each of the alternatives (with the exception of Alternative 1) include the excavation and removal of all lead-contaminated soil considered hazardous waste under RCRA, ground-water monitoring, scrap management including decontamination, relocation, and recycling, and long-term operation and maintenance (O&M) activities. Since O&M costs fluctuate considerably over time and from year to year, the total estimated O&M costs over a 30-year period (time period used for cost estimating purposes) are represented in the *"Estimated 30-Year O&M Costs"* line item under each alternative.

Alternative 1: Ground-Water Monitoring and Property Restrictions

Estimated Capital Cost:	$20,000
Estimated 30-Year O&M Costs:	$803,388
Estimated Present-Worth Costs:	$823,388
Estimated Implementation Timeframe:	less than 1 month

The "Ground-Water Monitoring and Property Restrictions" alternative would leave the contaminated soil and scrap in place, as is. This alternative would, however, require repair and maintenance of the fence, property restrictions limiting future land use to industrial operations only, five-year reviews, and implementation of a ground-water monitoring program. One of the cleanup objectives for this Site is to prevent the infiltration/migration of contaminants in soil to ground water resulting in ground-water contamination in excess of Site-specific action levels. Since none of the contaminated soil would be removed from the Site under this alternative, ground-water monitoring is deemed necessary for protectiveness reasons.

Alternative 2A: Limited Soil Excavation and Soil Cap

Estimated Capital Cost:	$4,034,287
Estimated 30-Year O&M Costs:	$157,782
Estimated Present-Worth Costs:	$4,192,069
Estimated Implementation Timeframe:	4 months

Under this alternative, excavation of all lead-contaminated soil considered to be hazardous waste would be required, followed by treatment and disposal in an off-Site permitted landfill. A soil cap, consisting of compacted clean fill overlain with topsoil to allow revegetation over the remaining contaminated soil above the cleanup level, would be installed. Property restrictions limiting future land use to industrial operations only would be implemented and, measures taken to restrict activities that could disturb the soil cap. In addition, five-year reviews would be conducted, one (1) year of quarterly ground-water monitoring performed to determine the effectiveness of the cleanup and to ensure that no contaminants were accidentally mobilized during implementation of the remedy, monitoring well abandonment, and long-term O&M activities including fence and cap repair.

Alternative 2B: Limited Soil Excavation and Pavement Cap

Estimated Capital Cost:	$4,324,277
Estimated 30-Year O&M Costs:	$429,631
Estimated Present-Worth Costs:	$4,753,908
Estimated Implementation Timeframe:	5 months

This alternative is almost identical to Alternative 2A described above, except that a water resistant pavement cap would be installed instead of a soil cap. The water resistant pavement cap would consist of an 8-inch stone subbase overlain with four (4) inches of bituminous concrete. Although a synthetic material cap was also considered, the pavement cap was selected in this alternative because of its durability, cost effectiveness and ease of maintenance. Long-term O&M activities would be the same as Alternative 2A above except maintenance of the cap would include frequent inspections (at least annually) followed by resurfacing of the wearing course (top 1 to 1.5 inches) due to cracking, settlement, and/or subsidence that might occur.

Alternative 3A: Extensive Surface Soil Excavation

Estimated Capital Cost:	$4,797,570
Estimated 30-Year O&M Costs:	$149,660
Estimated Present-Worth Costs:	$4,947,230
Estimated Implementation Timeframe:	4 months

This alternative requires the excavation of all contaminated surface soil (to a maximum depth of 1 foot) which exceeds 1,000 ppm lead. In addition, subsurface soil which has been identified as RCRA-characteristic waste would require excavation. All soil failing the RCRA TCLP test for leachability requires treatment prior to placement in an off-Site, permitted landfill. All remaining excavated soil would also be disposed at a permitted landfill. The Site would be backfilled and graded. The area would then be mulched and seeded to provide a soil cap. One year of quarterly ground-water monitoring would be performed to determine the effectiveness of the cleanup and ensure that no contaminants were accidentally mobilized during implementation of the remedy followed by monitoring well abandonment. The entire Site boundary would remain fenced, property restrictions instituted to limit future land use to industrial operations only and prevent disturbances to the subsurface lead-contaminated soil, and five-year reviews conducted. Long-term O&M activities would include fence repair and assessment of the soil cap's integrity.

Alternative 3B: Surface and Subsurface Soil Excavation

Estimated Capital Cost:	$4,950,894
Estimated 30-Year O&M Costs:	$141,539
Estimated Present-Worth Costs:	$5,092,433
Estimated Implementation Timeframe:	4 months

Unlike Alternative 3A above, all surface and subsurface, lead-contaminated soil above the Site cleanup level of 1,000 ppm would be excavated and disposed off-Site. Soil failing the RCRA TCLP test would require treatment prior to off-Site disposal in a permitted landfill. All remaining excavated soil would also be disposed at a permitted landfill. The Site would be backfilled and graded, as necessary, following the excavation. One year of quarterly ground-water monitoring would be performed to determine the effectiveness of the cleanup and ensure that no contaminants were accidentally mobilized during implementation of the remedy followed by monitoring well abandonment. The entire Site boundary would remain fenced, property restrictions instituted to limit future land use to industrial operations only, and five-year reviews conducted. Long-term O&M activities would include fence repair, as needed.

Alternative 4: Soil Washing

Estimated Capital Cost:	$5,291,677
Estimated 30-Year O&M Costs:	$141,539
Estimated Present-Worth Costs:	$5,433,216
Estimated Implementation Timeframe:	5 months

Under this alternative, all contaminated surface and subsurface soil exceeding the 1,000 ppm cleanup level would be excavated. The soil would then be "washed" on-Site. The "washing" procedure consists of four (4) basic steps: (1) the soil is screened to remove oversize (2 inches and larger) material, water is added and a soil/water slurry created, (2) using a hydrocyclone, the coarse- and fine-grained sand are separated, (3) air flotation is used for treatment of the coarse fraction, and (4) a sludge thickener is added to the slurry overflow from the hydrocyclone. The water overflow is then returned to the first step in the process for reuse. The technology is designed to separate the lead-contaminated fine particles from the coarser material. The finer particles (residuals) are the fraction in which the lead is concentrated. For this alternative, a sludge cake composed of the residuals would be transported off-Site to a permitted, hazardous waste facility, treated and disposed.

The excavated areas would be backfilled with the "cleaned" soil if it meets the cleanup level, and/or additional clean fill, and graded. Finally, off-Site treatment and disposal of: (1) contaminated oversize material and, (2) residuals, as mentioned above, and waste water resulting from the soil washing would occur. The contaminated material and the waste water would

be tested to determine the appropriate type of off-Site treatment and disposal necessary to meet all regulatory requirements.

One year of quarterly ground-water monitoring would be conducted to determine the effectiveness of the cleanup and to ensure that no contaminants were accidentally mobilized during implementation of the remedy followed by monitoring well abandonment. The entire Site boundary would remain fenced, property restrictions instituted to limit future land use to industrial operations only, and five-year reviews conducted. Long-term O&M activities would include fence repair, as needed.

Alternative 5: On-Site Fixation/Containment

Estimated Capital Cost:	$4,432,015
Estimated 30-Year O&M Costs:	$803,306
Estimated Present-Worth Costs:	$5,235,321
Estimated Implementation Timeframe:	6 months

This alternative involves excavation, on-Site fixation of the most highly contaminated soil, containment of the remaining contaminated soil above the 1,000 ppm cleanup level and, off-Site disposal of oversized material. Fixation involves adding binding agents to the contaminated soil to create a cement-like mass. Once the soil has been 'fixated', it would be placed along with the remaining soil into a permeable geotextile-lined, on-Site containment cell (i.e., an excavated area large enough to hold the cement-like mass and the other contaminated soil) and a soil cap placed over the cell. For cost estimating purposes under this alternative, thirty (30) years of semi-annual ground-water monitoring would be conducted to determine the effectiveness and permanence of the remedy. The entire Site boundary would remain fenced, property restrictions instituted to limit future land use to industrial operations only and prevent activities that could disturb the cell and cap, and five-year reviews conducted.

PRP Alternative Proposed During Public Comment Period

EPA was asked to consider another alternative in addition to those described above. This alternative was suggested by the PRP Group during the Proposed Plan public comment period. The proposed alternative includes the installation of an industrial-grade cap, consisting of a 4-inch thick asphalt layer underlain by 6 inches of crushed rock, over the operational portions of Pacific Recycling and UPRR where lead concentrations exceed the cleanup level of 1,000 ppm. A Portland cement concrete pad would be placed in the vicinity of the existing crane on property leased from UPRR that is currently part of Pacific Recycling's operating facility. Soil above 1,000 ppm lead on the McCarty property would be consolidated in the northeast corner of the pit and covered with 2 1/2 feet of clayey soil under a 1/2 foot vegetative cap. Other components of the proposed alternative include Site grading and berm construction for surface water

control, scrap relocation prior to cap construction, installation of permanent chain-link fencing, seeding and fertilizing of the soil cap, and institutional controls. The proposed alternative does not include excavation, treatment and off-Site disposal of the RCRA-characteristic soil.

The PRPs estimate the cost for this alternative to be approximately $1,210,000. A comparison of this alternative against the nine criteria and the other alternatives considered is presented in the following section.

SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

Each remedial alternative must be evaluated according to nine criteria that serve as the basis for comparing the alternatives, and for ultimately selecting an appropriate remedial action. The evaluation criteria are divided into three categories: (1) threshold criteria that relate directly to statutory requirements and must be satisfied by the chosen alternative; (2) primary balancing criteria that include long- and short-term effectiveness, implementability, reduction of toxicity, mobility or volume, and cost; and (3) modifying criteria that measure the acceptability of the alternatives to state agencies and the community. A summary of relative performance of the alternatives based on these criteria is included in Table 8.

Alternative 1 ("Ground-Water Monitoring and Property Restrictions") was included in the development and evaluation of the final remedial alternatives to provide a basis for comparison. However, this alternative does not meet the threshold criteria, which include overall protection of human health and the environment and compliance with ARARs. Under this alternative, no remedial actions would be taken to address any of the contaminated material at the Site. Ground-water monitoring and property restrictions are not considered adequate measures to protect human health and the environment at this Site. Therefore, this alternative is not discussed in the comparison provided below.

A. Threshold Criteria

The remedial alternatives were first evaluated in relation to the threshold criteria: overall protection of human health and the environment, and compliance with ARARs. The threshold criteria must be met by the alternatives to be considered as potential remedies.

1. Overall Protection of Human Health and the Environment:

This criterion addresses whether a remedial alternative protects human health and the environment. Protection is

determined by assessing whether the risks associated with each exposure pathway (i.e., ingestion of soil, ingestion of ground water, and inhalation of vapor phase chemicals from ground water while showering) are eliminated, reduced, or controlled through treatment and engineering or institutional controls. The Risk Assessment results indicate that risks posed at the Site are from the incidental ingestion of lead-contaminated soil.

Alternatives 2 through 5 provide adequate protection of human health and the environment. Alternatives 3B and 4, however, provide the greatest level of protection because all contaminated material would be removed from the Site above the 1,000 ppm cleanup level. Ranking third amongst all of the alternatives in providing adequate protection, Alternative 3A requires excavation, off-Site disposal of all soil above RCRA regulatory levels, and capping of surface soil exceeding the 1,000 ppm cleanup level. Following Alternative 3A in its degree of protectiveness, Alternative 5 requires on-Site treatment of all soil failing the RCRA regulatory level, containment of the remaining soil above 1,000 ppm, and capping to prevent against direct contact and ingestion. To a lesser extent, Alternatives 2A and 2B achieve protection by capping the Site thereby preventing exposure to the contaminated soil.

2. Compliance with ARARs:

The selected remedial action must comply with identified substantive applicable requirements under federal and state laws. Remedial actions must also comply with laws and regulations that are not directly applicable, but do pertain to situations sufficiently similar to those encountered at the Site, so that use of the requirements is well suited to the Site. These are known as relevant and appropriate requirements. Evaluation of the remedial alternatives with chemical-, location-, and action-specific ARARs is necessary for determining compliance.

Alternatives 2 through 5 meet the ARARs for this Site, and no waivers are necessary.

B. Primary Balancing Criteria

Each alternative that satisfies the threshold criteria is evaluated against the following five balancing criteria:

3. Long-Term Effectiveness and Permanence:

This criterion evaluates the ability of a remedial alternative to maintain reliable protection of human health and the environment once remediation goals have been achieved. The magnitude of the residual risk is considered as well as the adequacy and reliability of controls.

Alternatives 3B and 4 best satisfy this criterion. Under both alternatives, all contaminated material above the 1,000 ppm cleanup level would be removed from the Site. Alternatives 2A, 2B, 3A, and 5 all include removing and treating all of the lead-contaminated soil failing the RCRA hazardous waste test and capping varying amounts of the remaining contaminated soil. The likelihood of effectively and permanently maintaining either a soil or a pavement cap under Alternatives 2A, 2B, 3A, 5 and the alternative proposed by the PRP Group on the operating facility is highly uncertain given ongoing scrap handling operations. Long-term effectiveness is also dependent on assuming future land use is limited to industrial activities only. The 1,000 ppm cleanup level is not considered protective of children and fetuses.

4. Reduction of Toxicity, Mobility or Volume Through Treatment:

This criterion addresses the statutory preference for selecting remedial actions that use treatment technologies that permanently reduce the toxicity, mobility or volume of the hazardous substances.

Alternatives 4 and 5 reduce the mobility of the most highly contaminated soil through on-Site treatment. Additionally, Alternatives 2A, 2B, 3A and 3B reduce the mobility of the most highly contaminated soil through treatment. Alternative 4 best satisfies the regulatory preference for treatment and is the most effective alternative for reducing the toxicity, mobility and volume. Under Alternative 4, contaminants would be washed from the soil, concentrated as fine material in the waste water, and treated. Alternative 5 reduces the mobility of the most highly contaminated soil using fixation prior to placement in the on-Site landfill. However, soil above the 1,000 ppm cleanup level which is not designated RCRA-characteristic soil would be consolidated in the on-Site landfill thereby increasing the volume.

5. Short-term Effectiveness:

This criterion refers to the period of time needed to achieve protection, and any adverse impacts on human health and the environment, specifically site workers and community residents, that may be posed during the construction and implementation period until cleanup goals are achieved.

Alternatives 2 through 5 are expected to create some short-term risk to the community and Site workers associated with the disturbance of contaminated dust generated during excavation of the contaminated soil. However, during cleanup activities, no visible dust will be allowed at the property boundaries, and dust suppressant will be used. Alternatives 2A and 2B would pose the fewest short term hazards because the least amount of

contaminated soil would be excavated. The remaining soil above 1,000 ppm would be capped immediately.

The implementation time required (including time to conduct treatability studies, if necessary) ranges from 7 months (Alternative 4) down to 3 months (Alternative 2A). Alternatives 2B, 3A, and 3B would require 4 months to implement and Alternative 5 would require 6 months.

6. Implementability:

This criterion refers to the technical and administrative feasibility of a remedial alternative, including the availability of goods and services needed to implement the selected remedy.

Alternatives which would require excavation and off-Site disposal of contaminated soil, with or without capping, are the easiest to implement. These alternatives include 2A, 2B, 3A and 3B. The implementability of soil washing (Alternative 4) or on-Site fixation/containment (Alternative 5) would have to be demonstrated using Site-specific testing of the technology (i.e., treatability testing).

Services necessary for implementing Alternatives 2A through 3B are expected to be available within the state of Idaho. Alternatives 4 and 5 require particular expertise which may also be available in-state. Finally, in-state and out-of-state permitted municipal landfills (operated under 40 CFR 258) with the capacity for handling the off-Site disposal of treated and untreated soil are also available.

7. Cost:

Evaluation of project costs requires an estimation of the net present value of capital costs and O&M costs. The costs presented below (and in the 1994 FS) are estimates. Actual costs could vary based on the final design and detailed cost itemization.

Total estimated costs for the alternatives considered range from approximately $4,192,069 (Alternative 2A- Limited Soil Excavation and Soil Cap) to approximately $5,433,216 (Alternative 4- Soil Washing). The cost spread between the estimate of the least expensive alternative (Alternative 2A) and the most expensive alternative (Alternative 4) is $1,241,147. Alternative 3B is at the higher end of the range with costs estimated to be $5,092,433. Alternative 5 has costs associated with ground-water monitoring estimated over a 30-year time period.

As stated in the RI/FS, scrap management costs account for a large percentage of the total remedial costs for Alternatives 2

through 5. These alternatives all have costs associated with O&M of the cleanup which have been estimated over a 30-year time period. Present worth of annual O&M costs were calculated using a discount rate of 6 percent which is approximately the current 30-year treasury rate. Costs for all alternatives are estimates only. Actual costs are likely to be within the +50 to -30 percent range.

C. Modifying Criteria

Modifying criteria were used in the final evaluation of the remedial alternatives following the close of the public comment period, and were used to modify the preferred alternative that was discussed in the Proposed Plan.

8. State Acceptance:

This criterion refers to whether the IDEQ agrees with the preferred remedial alternative.

IDEQ supports the preferred alternative of Site-wide surface and subsurface excavation, treatment as necessary, and off-Site disposal of lead-contaminated soil above 1,000 ppm. IDEQ has been involved with the development and review of the final operable unit RI/FS, the Proposed Plan, and this ROD.

9. Community Acceptance:

This criterion refers to the public support of a given remedial alternative.

Community response is presented in the Responsiveness Summary, which addresses the comments received during the public comment period. Three letters were received during the comment period: two from private citizens (one expressing support for the cleanup and the other expressing concern over the length of time taken to study and clean up the Site, and the significant costs associated with Superfund work), and an extensive comment package from the PRP Group. The PRP Group was primarily concerned with the recommended cleanup level based on a future residential land use scenario, the possible underestimation of the volume of contaminated soil requiring remediation at the Site, the lack of a current industrial land use risk evaluation, and the proposed remedy.

Nine Criteria Evaluation of PRP Group Proposed Alternative

EPA and IDEQ believe the alternative proposed by the PRP Group during the public comment period as described on pages 33-34 of the ROD, would not be as protective of human health and the environment, nor as cost effective as EPA's selected remedy. EPA has determined that, under any scenario, it is unacceptable to

leave the most highly contaminated soil (i.e., soil which is RCRA-characteristic) untreated because of the potential threat to ground water from leaching. There is a source of potable ground water beneath the Site.

The industrial-grade cap included in the alternative proposed by the commenters is considered inadequate based on the design requirements of caps required at similar operating facilities undergoing cleanup under state and/or federal authorities. For example, an industrial-grade cap consisting of 12 inches of reinforced concrete over an impermeable liner underlain by 6 inches of compacted aggregate was considered adequate at a facility in Washington state, General Metals, where recycling activities comparable to those conducted at Pacific Recycling occur. The PRP Group's proposed cap design is not comparable. In the non-operating areas of facilities, two acceptable cap compositions were evaluated by EPA: a low permeability asphalt cap composed of an 8 inch compacted gravel subbase, a 6 inch asphaltic concrete binder course and a 3 inch asphalt wearing course, and a cap consisting of a 6 inch compacted gravel subbase, a 3 inch low permeability asphalt course and a 9 inch aggregate industrial asphalt surface. Neither of these designs was proposed by the PRP Group for the non-operating areas of the Site.

The long-term permanence of the cap is especially important for the type of alternative proposed by the PRP Group because of the very high lead levels found in Site soils which pose the principal threat at the Site. The nature of the on-going scrap recycling activities, particularly movement of heavy equipment and scrap, could compromise the effectiveness and permanence of the cap, thereby increasing the risk of exposure to contaminated Site soil, particularly given the composition of the cap in the suggested alternative. Additionally, future activity on the McCarty property where the soil cap would be placed over the consolidated, lead-contaminated soil, would be severely restricted.

The PRPs estimate the cost for this alternative to be approximately $1,210,000. The estimated costs for implementing the suggested alternative, modified to include excavation, treatment and off-Site disposal of all RCRA-characteristic soil and to reflect the cap design discussed above for both operating and non-operating portions of the Site ranged from $5,350,000 to $5,440,000. This range is $200,000 to $300,000 more than the selected remedy which is estimated to cost $5,092,433.

The PRP Group's alternative as described on pages 33-34 of the ROD compares favorably with Alternative 2B in that it can be relatively easily implemented, and would pose few short-term risks. It is unclear whether this alternative would comply with ARARs since EPA has not done a complete analysis. The PRP

Group's suggested alternative would not reduce toxicity, mobility or volume through treatment. Even though capping is not considered treatment, mobility of the contaminants would be impeded by the cap. Neither EPA nor IDEQ favor capping of the Site particularly because of the difficulty in maintaining long-term permanence and effectiveness of the cap at an operating facility and on property whose future use is currently unknown.

SELECTED REMEDY

The selected remedy at the Site is Alternative 3B, Site-wide surface and subsurface soil excavation and off-Site disposal of lead-contaminated soil above 1,000 ppm, and decontamination/ recycling of scrap material. This remedy was selected because it best satisfies the nine criteria previously identified. The most important of the balancing criteria which clearly set this remedy apart from the other alternatives are its long-term effectiveness and permanence, its ease of implementation and relatively short implementation time, and its cost competitiveness. It is protective of human health and the environment, complies with all applicable or relevant and appropriate environmental regulations, and removes lead-contaminated soil to a level protective of future industrial land use activities.

The specific components of the selected final operable unit remedial action for lead-contaminated soil include:

(1) Excavation, processing, transport and disposal of approximately 6,510 cubic yards of lead-contaminated soil (all soil above 1,000 ppm- total concentration) as follows:

   (a) All soil above the lead cleanup level of 1,000 ppm but below the RCRA-characteristic waste level will be disposed in a permitted, municipal landfill operated under 40 CFR 258,

   (b) All soil designated RCRA-characteristic waste for lead will be treated and disposed in a permitted, municipal landfill operated under 40 CFR 258,

   (c) Scrap material that is not being recycled as part of the operating Pacific Recycling business and which does not interfere with remedial activities, will be decontaminated, relocated and recycled. Following decontamination, if necessary, the property owner(s) will be allowed to store the material in an area on their respective properties which is below the 1,000 ppm cleanup level for lead in soil. As stated in the RI/FS, scrap management costs account for a large percentage of the total remedial costs. It is feasible that these costs could be significantly reduced if the

owners of the scrap can determine a mutually acceptable, cost-effective method of scrap disposition.

(d) The treatment and disposal facility must be acceptable for Superfund waste under EPA's Off-Site Disposal Rule.

(2) Backfilling with clean soil from off-Site, grading and restoration of surface drainage will occur following the excavation;

(3) Implementing supplementary engineering controls and environmental monitoring, such as air monitoring, to minimize exposure to releases of hazardous substances during cleanup activities;

(4) Requiring institutional controls including permanent fencing to restrict public access to the Site, and property restrictions limiting future property usage to industrial operations only on all properties that comprise the Site (the form of restrictions will be determined following issuance of this ROD);

(5) One year of quarterly ground-water monitoring is required to determine the effectiveness of the cleanup and ensure that no contaminants were accidentally mobilized during implementation of the remedy, followed by abandonment of the monitoring wells;

(6) Reviews will be conducted no less often than every five (5) years after commencement of the remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

Remedial Action Performance Standards:

The final operable unit remedial action shall be completed subject to the following standards of performance.

A. The final operable unit remedial action area is shown in Figure 2. Surface and subsurface areas which require remediation are also delineated on the figure.

B. Within the final operable unit remedial action areas, all soil with lead concentrations of 1,000 ppm or above shall be excavated, tested and treated if necessary, and disposed off-Site. Lead-contaminated soil which has a TCLP test result of less than the hazardous waste characteristic test concentration in 40 CFR 261.24 shall be placed in a permitted, municipal landfill operated under 40 CFR 258. Lead-contaminated soil failing the RCRA TCLP leachate test which has a TCLP test concentration equal to or greater than the

hazardous waste characteristic level in 40 CFR 261.24 shall be treated prior to placement in a permitted, municipal landfill operated under 40 CFR 258. Sampling methods and protocols to be utilized in determining the extent, character and fate of the contaminated soils will be done in accordance with an EPA-approved sampling and analysis plan.

C. All contaminated metal scrap remaining within the final operable unit remedial action area as depicted in Figure 2, except that currently undergoing recycling as part of the operating Pacific Recycling business and which does not interfere with remedial activities, will be decontaminated and recycled.

D. There are two remedial compliance objectives which must be addressed during verification of Site cleanup. One objective is to verify that Site soil meets the 1,000 ppm cleanup level. Verification sampling to evaluate the statistical compliance with the 1,000 ppm cleanup level must be based upon a sufficient number of analytical samples to calculate a statistically valid upper confidence interval for the mean lead concentration. The other objective is to determine whether lead "hot spots" have been remediated. Detailed procedures for meeting both of these objectives will be established during remedial design.

E. Backfilling, grading and restoration of surface drainage shall be conducted to the extent necessary to ensure Site stability and prevent future drainage or erosion problems.

F. All federal and state rules and regulations related to protecting air quality (via air monitoring and dust suppression), maintaining OSHA health and safety standards, and ensuring the proper handling and shipment of hazardous materials off-Site must be complied with during the remedial action.

STATUTORY DETERMINATIONS

EPA's primary responsibility at CERCLA sites is to undertake remedial actions that are protective of human health and the environment. In addition, Section 121 of CERCLA, 42 U.S.C. §9621, establishes several other statutory requirements and preferences including: (1) a requirement that the remedial action, when complete, complies with applicable or relevant and appropriate environmental standards established under federal and state laws unless a statutory waiver is invoked; (2) a requirement that the remedial action be cost-effective and utilize permanent solutions and alternative treatment

technologies or resource recovery technologies to the maximum extent practicable; and, (3) a statutory preference for remedies that permanently and significantly reduce the volume, toxicity or mobility of hazardous substances over remedies that do not achieve such results through treatment.

The selected remedial action meets the statutory requirements of CERCLA, and, to the extent practicable, the NCP. The evaluation criteria are discussed below.

Protection of Human Health and the Environment:

The selected final operable unit remedial action is protective of human health and the environment and will eliminate the risks above the 1,000 ppm lead cleanup level posed through each pathway by removal, treatment to the extent practicable, and disposal of lead-contaminated soil.

For ground water, no remedial action under this final operable unit cleanup is necessary to protect human health and the environment. This conclusion is based on the results of quarterly ground-water monitoring conducted in 1989-1990 and resumed in 1990-1991 which confirm that there are no contaminants at concentrations above federal drinking water MCLs or action levels in ground water beneath the Site.

This remedial action will eliminate the source of lead contamination at the Site above the 1,000 ppm soil cleanup level.

While this remedial action will effectively and permanently remove on-Site lead-contaminated soils above levels protective of on-Site workers under a future industrial land use scenario, lead and PCBs will remain above residential health-based levels thereby prohibiting unrestricted future land use. Reviews will be conducted no less often than every five (5) years following initiation of the remedial action to ensure adequate protection of human health and the environment.

Compliance with Applicable or Relevant and Appropriate Requirements:

Pursuant to Section 121(d) of CERCLA, 42 U.S.C. §9621(d), remedial actions shall, upon their completion, reach a level or standard of control for such hazardous substances, pollutants or contaminants which at least attains legally applicable or relevant and appropriate federal standards, requirements, criteria, or limitations, or any promulgated standards, requirements, criteria, or limitations under a state environmental or facility siting law that is more stringent than any federal standard (ARARs).

The selected remedial action satisfies the requirements of this section of CERCLA by complying with all identified ARARs. No ARAR waivers have been sought or invoked for any component of the selected remedial action. The chemical- and action-specific ARARs (there are no location-specific ARARs for this Site) include the following:

- RCRA regulations (40 CFR 261-263 and 268) as incorporated by the applicable State of Idaho Regulation, address the requirements for defining, characterizing and listing hazardous wastes; for generators pertaining to manifesting, transporting, and recordkeeping; for transporters pertaining to shipment of hazardous wastes off-site; and, land disposal restrictions. These regulations are applicable to the characterization and appropriate disposal of lead-contaminated soil from the Site.

- Clean Air Act (42 USC 7409, 7412) and the Idaho Rules and Regulations for the Control of Air Pollution in Idaho (Citation Section 16.01.1011-1012, 16.01.1251-1253, and 16.01.1501-1504), are applicable to the control of fugitive dust emissions during excavation and other field activities, and pertain to compliance with the national ambient air quality standards and national emission standards for hazardous air pollutants.

- Idaho Solid Waste Management Regulations and Standards Manual (Sections 16.01.6005,01 and 16.01.6008,07), are relevant and appropriate to the management of all solid wastes during their storage, collection, transfer, transport, processing, separation, treatment, reuse, recycling, or disposal to prevent health hazards, public nuisances, or pollution to the environment.

- Idaho Administrative Procedures Act (Sections 16.01.2050,02, 16.01.2020,06, 16.01.2051, 16.01.2200, and 16.01.2800), are relevant and appropriate to the protection of state ground water against unreasonable contamination or deterioration. These standards are designed to control and regulate the public drinking water system in order to protect the health of consumers. One year of quarterly ground-water monitoring is required following completion of remedial construction activities at the Site.

- National Primary Drinking Water Regulation, Control of Lead and Copper (40 CFR 141.80), sets the federal action level for lead at the consumer's tap at 15 parts per billion. Under Superfund policy, this federal action level is relevant and appropriate as the ground-water standard for the Site. Under the Clean Water Act (CWA) (33 USC 1251, 40 CFR Part 230, 231), State Antidegradation Requirements/ Use Classification require every state to classify all the

waters within its boundaries according to intended use. There are two aquifers (upper and lower) beneath the Site. EPA has designated the upper aquifer as Class IIB since it is potentially available for drinking water, agriculture or other beneficial uses. The lower aquifer is Class I (i.e. drinking water) as it is the primary drinking water source for the community.

- National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300.440) contains the applicable procedures for planning and implementing off-site response actions. At this Site, the requirements of the Off-Site Disposal Rule must be met.

Other Criteria, Advisories, or Guidance To-Be-Considered (TBC)

The following guidance was also considered:

- EPA's *Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities* (Office of Solid Waste and Emergency Response [OSWER] Directive No. 9355.4-12; EPA 1994) establishes a residential "screening level" of 400 ppm, above which further study is warranted (i.e., in the form of a site-specific risk assessment, which was conducted for the Site). A cleanup level of 1,000 ppm has been selected for this Site since this level is considered protective of on-Site workers; the property comprising the Site is zoned industrial; and, property restrictions will limit future property use to industrial activities only.

Remedial actions taken at this Site must further comply with the Department of Transportation Hazardous Materials Regulations (49 CFR, Parts 171, 172, 173 subparts A, B, J and N, and 177, 178 and 180, and subchapter C) which address shipment of any hazardous material off-site, and all relevant Idaho Codes and Supplements Sections, specifically 67-2929, 2930 (Supplement 1988) and 49-2201 through 2212, and the Idaho Hazardous Waste Management Regulations (IHWMR) Sections 16.01.05006 and 16.01.05007. In addition, the Occupational Safety and Health Act (29 CFR Parts 19010 and 1926) must be adhered to as it addresses safety requirements for workers engaged in response or other hazardous waste operations.

Cost-Effectiveness:

The cost-effectiveness of each alternative was evaluated, including those which were screened out prior to the final alternatives assessment in the Feasibility Study. The selected final operable unit remedial action is cost-effective as it affords overall effectiveness and protectiveness proportional to costs. Other remedial alternatives including innovative treatment technologies were considered, but were found to be

generally more costly without affording additional protectiveness commensurate with their cost.

Utilization of Permanent Solutions and Alternative Treatment Technologies or Resource Recovery Technologies to the Maximum Extent Practicable:

EPA and IDEQ have determined that the selected remedial action represents the best balance of tradeoffs among the alternatives considered with respect to EPA's nine evaluation criteria. The remedy represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a cost-effective manner. It is protective of human health and the environment, and complies with all applicable environmental regulations. This remedial action also utilizes treatment where feasible and practicable.

Preference for Treatment As a Principal Element:

By treating the most highly contaminated soil prior to disposal at an off-Site permitted landfill, the selected remedy satisfies the preference for treating the principal threat posed by the Site.

DOCUMENTATION OF SIGNIFICANT CHANGES

The Proposed Plan was released for public comment in October, 1994. The Plan identified a proposed cleanup level of 400 ppm, based on future residential land use.

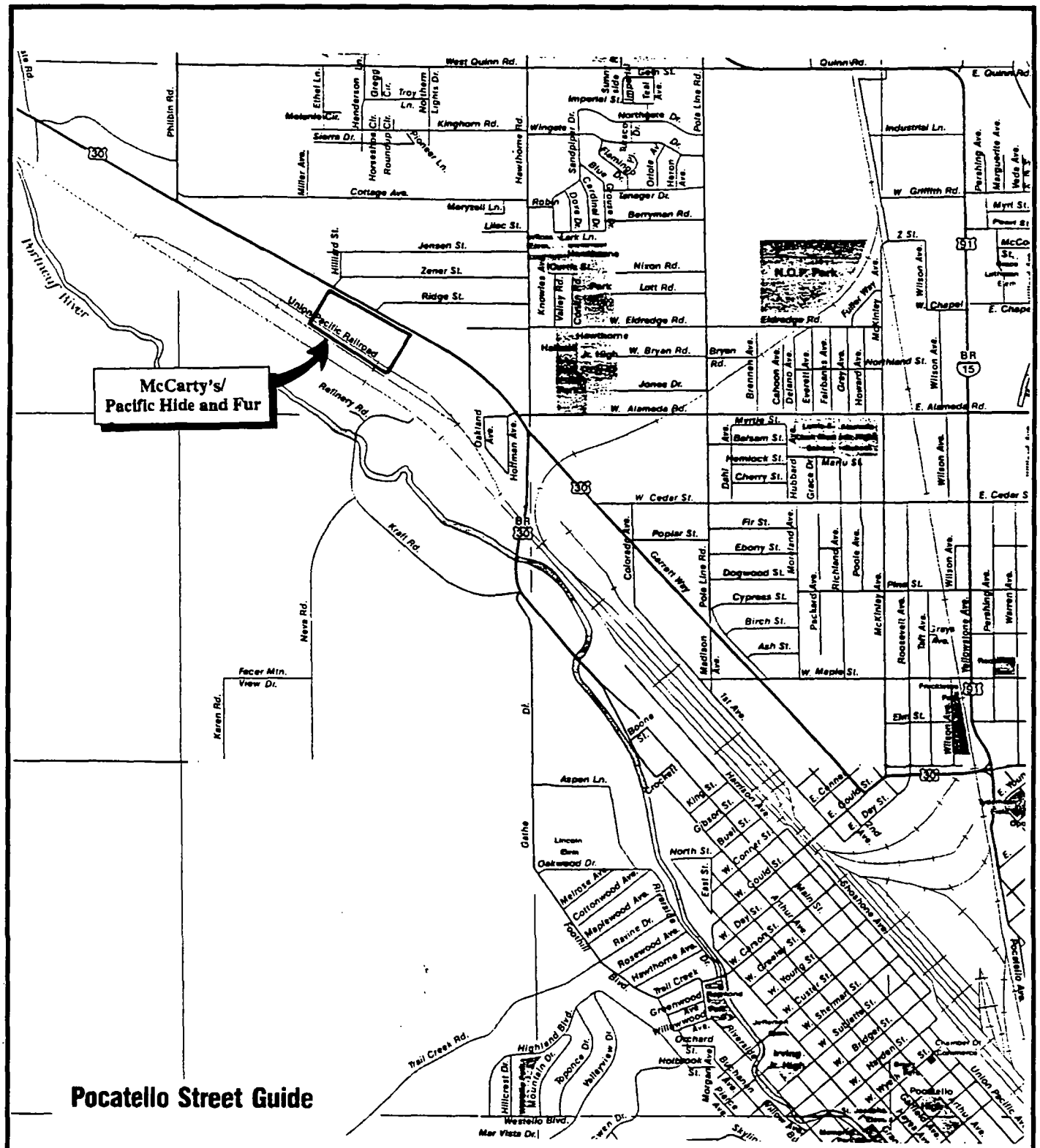
After the public comment period, EPA reassessed the likelihood of the properties within the Site being used for residential development. Given the historical industrial land use, and the likelihood that such use will continue, EPA has decided it is appropriate to revise the lead cleanup level to 1,000 ppm. This significant change is a logical outgrowth based on information available to the public during the comment period on the Proposed Plan and RI/FS Report. The public could have anticipated this change based on its knowledge of the historical industrial land use of the properties comprising the Site; there is no foreseeable change in future land use of the properties; and, current zoning of the properties is for industrial use.

Previous EPA guidance recommended using a range of 500-1,000 ppm as an "interim soil cleanup level" at Superfund sites under a future residential land use scenario. At the upper end of that range, the 1,000 ppm level has been used extensively in the past as a cleanup level at sites zoned for industrial use. EPA has selected the cleanup alternative identified in the Proposed Plan as the preferred remedy for the Site. However, by raising the cleanup level from 400 ppm to 1,000 ppm, two new remedial components have been added as cleanup requirements. These

include property restrictions which will be implemented to limit future land use to industrial operations only and, reviews which will be required no less often than every five (5) years following initiation of the remedial action to ensure adequate protection of human health and the environment.

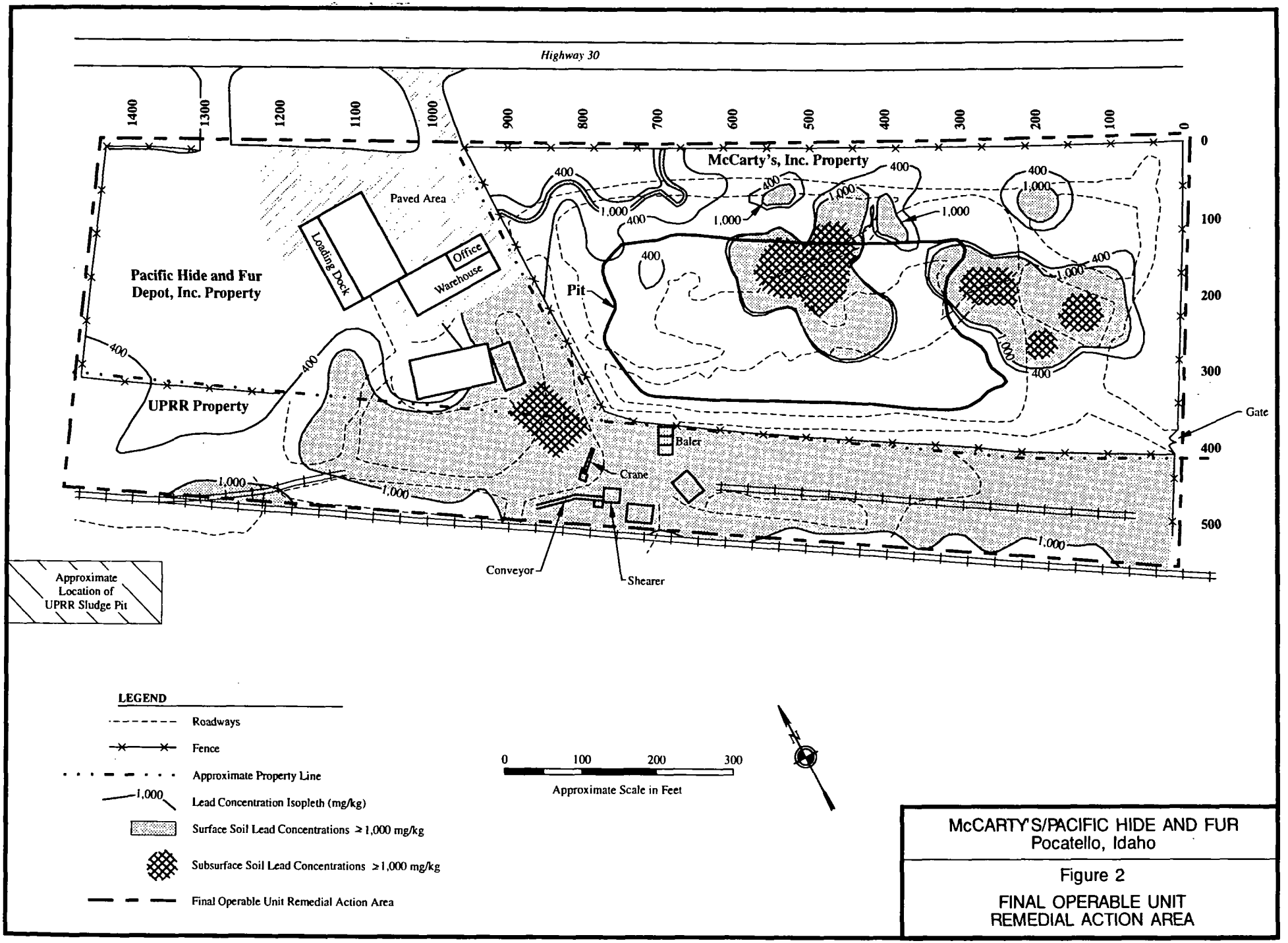
Addenda to the October 1994 RI/FS and Risk Assessment were added to the AR for the Site in June, 1995. These addenda document the change in the lead cleanup level for the Site from 400 ppm (recommended in the Proposed Plan) to 1,000 ppm. The Risk Assessment portion of the addenda contains an evaluation of risk based on a future industrial land use scenario. An evaluation of the capping alternative submitted during the public comment period is included in the Feasibility Study addendum.

The Proposed Plan inadvertently omitted the requirement in Alternative 3B to conduct one year of quarterly ground-water monitoring following its implementation. The October 1994 FS describes the ground-water monitoring component of the selected remedy.



McCARTY'S/PACIFIC HIDE AND FUR
Pocatello, Idaho

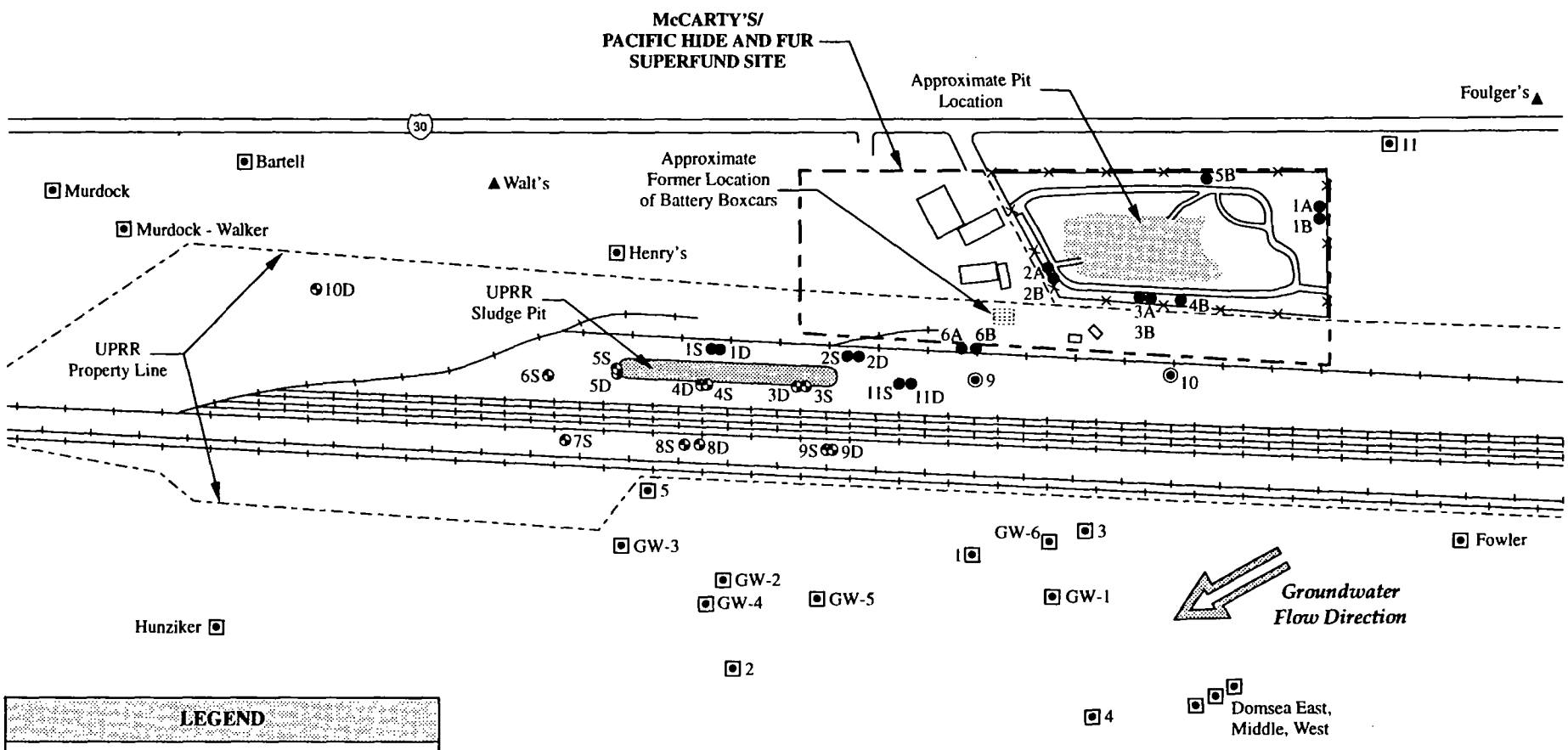
Figure 1
SITE LOCATION MAP



McCARTY'S/PACIFIC HIDE AND FUR
Pocatello, Idaho

Figure 2

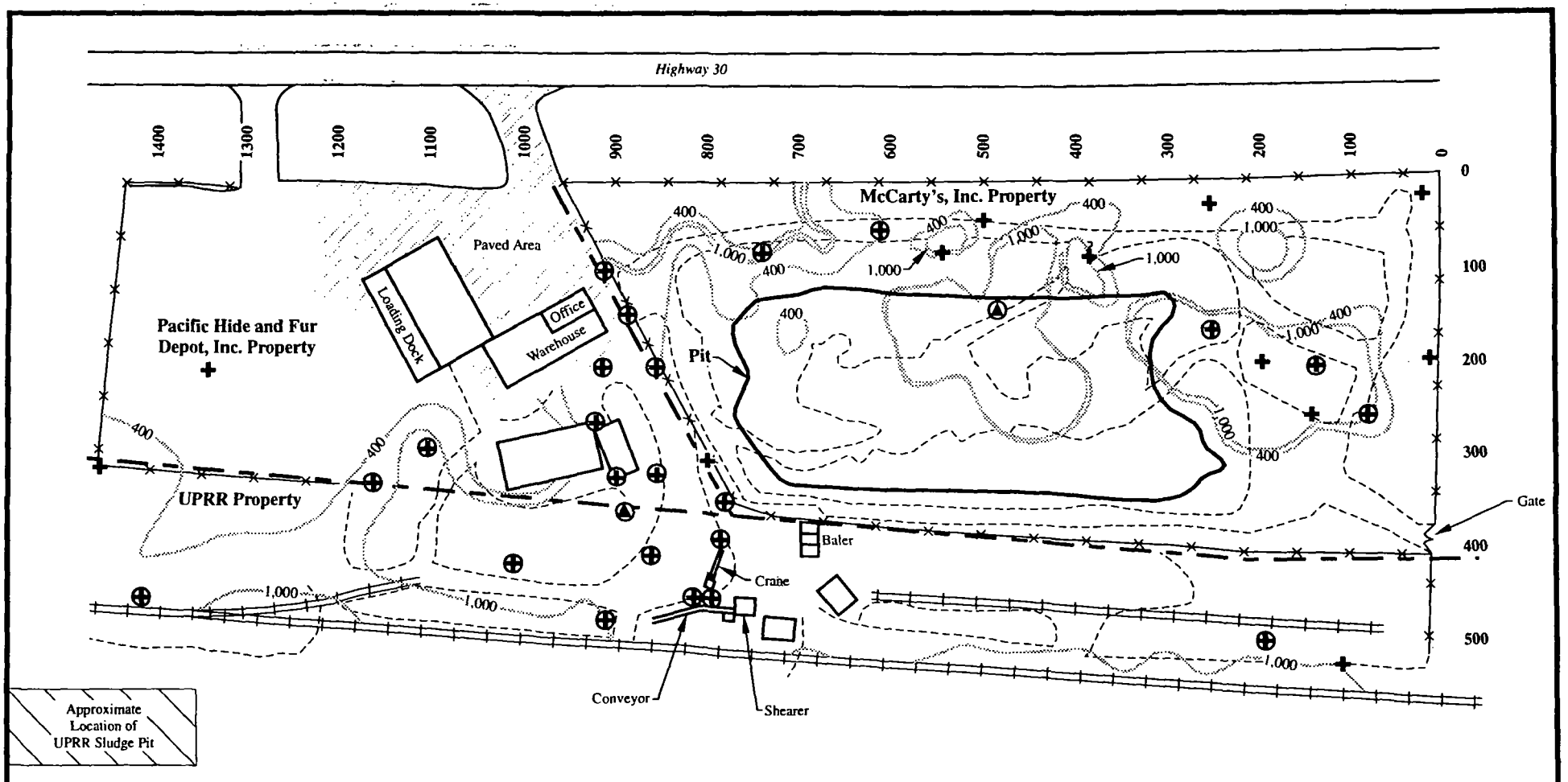
FINAL OPERABLE UNIT
REMEDIAL ACTION AREA



McCARTY'S/PACIFIC HIDE AND FUR
Pocatello, Idaho

Figure 3

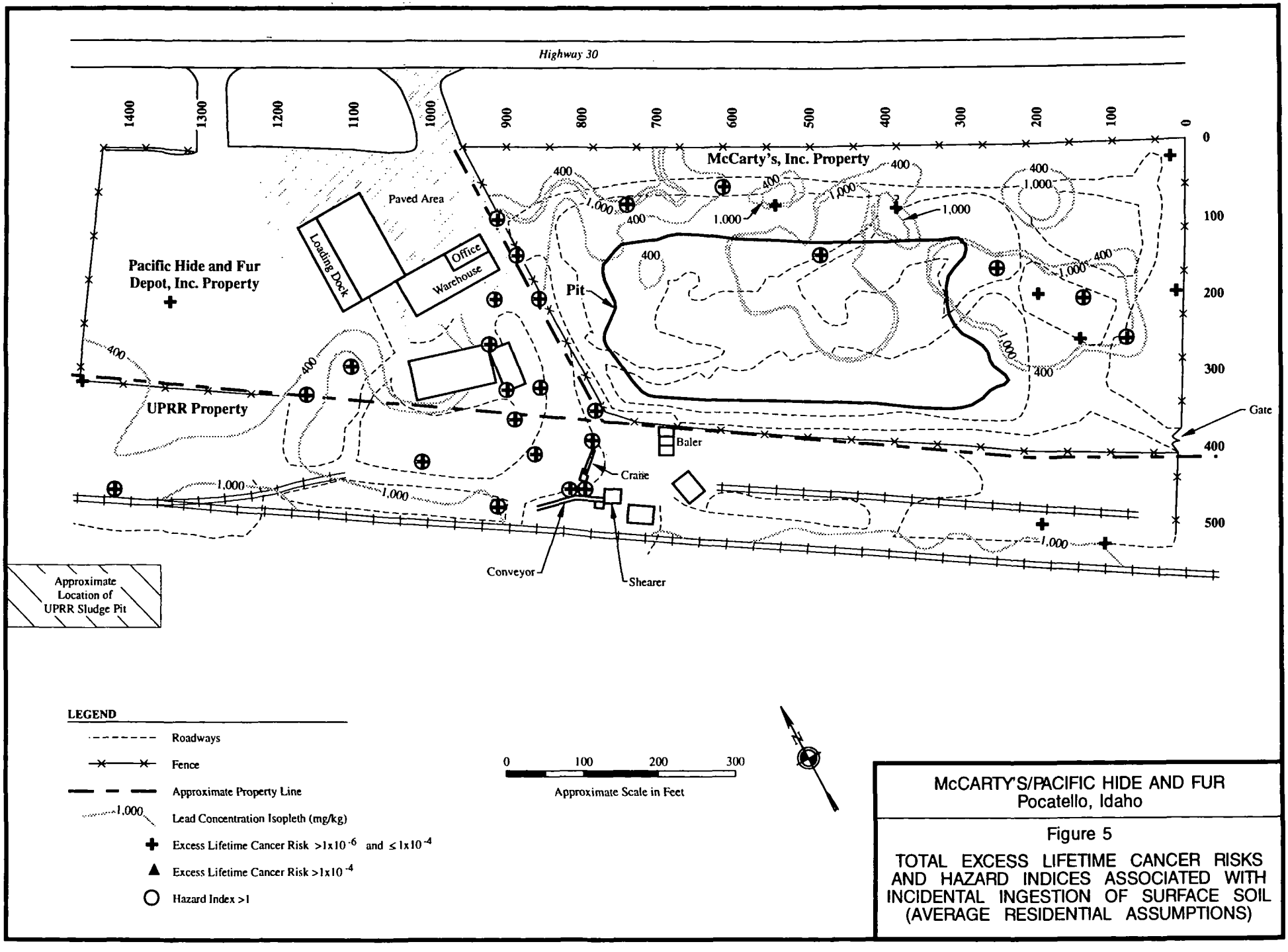
MONITORING WELL LOCATION
AND SAMPLING MAP



McCARTY'S/PACIFIC HIDE AND FUR
Pocatello, Idaho

Figure 4

TOTAL EXCESS LIFETIME CANCER RISKS AND HAZARD INDICES ASSOCIATED WITH INCIDENTAL INGESTION OF SURFACE SOIL (RME RESIDENTIAL ASSUMPTIONS)



McCARTY'S/PACIFIC HIDE AND FUR
Pocatello, Idaho

Figure 5

TOTAL EXCESS LIFETIME CANCER RISKS AND HAZARD INDICES ASSOCIATED WITH INCIDENTAL INGESTION OF SURFACE SOIL (AVERAGE RESIDENTIAL ASSUMPTIONS)

Table 1
McCARTY'S/PACIFIC HIDE AND FUR - SOIL SAMPLE COLLECTION SUMMARY

Sampling Event	Surface Soil[a]						Subsurface Soil[a]	
	XRF Screening Locations	TAL Analysis	Lead Analysis	SVOC Analysis	TCLP Analysis	Soil Characteristics	XRF Screening Locations	TAL Analysis
August 1990	79	9	5	9	6			
May 1991	70	16			8		12	
First Operable Unit Remedial Action Confirmation Sampling 1992			9					
Remedial Investigation October/November 1993	65	15	56			3		27
Total	214	40	70	9	14	3	12	27

[a] Samples collected prior to the first operable unit remedial action completed in 1992 that are no longer considered representative of current Site conditions are excluded. Field duplicate samples also are excluded.

XRF - X-Ray Fluorescence
TAL - Target Analyte List
SVOC - Semivolatile Organic Compound
TCLP - Toxicity Characteristic Leaching Procedure

Table 2
McCARTY'S/PACIFIC HIDE AND FUR - SUMMARY OF POTENTIAL INORGANIC ELEMENTS OF CONCERN IN SURFACE SOIL

Analyte	Minimum Detected (mg/kg)	Maximum Detected (mg/kg)	Background Soil (95th Percentile) (mg/kg)	No. of Locations Exceeding Background/ Total No. of Samples[1]	Residential Risk-Based Concentration (mg/kg)[3]	No. of Locations Exceeding Residential Risk-Based Concentration/ Total No. of Samples[1]	Industrial Risk-Based Concentration (mg/kg)[4]	No. of Locations Exceeding Industrial Risk-Based Concentration/ Total No. of Samples[1]
Antimony	3.8	76	0.26	21/40	31c	9/40	820n	0/40
Arsenic	2.5	91.6	4.81	34/40	0.37c	40/40	3.3c	38/40
Beryllium	0.11	2.91	0.8	8/40	0.15c	26/40	1.3c	5/40
Cadmium	0.54	125	6.73	26/40	39n	11/40	1,000n	0/40
Copper	6.7	11,200	14.9	33/40	2,900n	6/40	76,000n	0/40
Lead	3.11	234,297	20.1	87/110[2]	400n	62/110	NA	NA
Manganese	152	1,270	501	13/40	390n	22/40	10,000n	0/40
Thallium	0.17	7.3	NA	NA	5.5n	1/40	140n	0/40
Zinc	31.6	91,330	84.1	39/40	23,000n	1/40	610,000n	0/40

NA - Not available.
c - Equivalent to an excess lifetime cancer risk of $1x10^{-6}$.
n - Equivalent to a hazard quotient of 1.

(1) Total number on samples includes laboratory analyzed samples only; XRF screening data are not included.

(2) A total of 110 surface soil samples were submitted for laboratory analysis; XRF field screening measurements were collected at 214 surface soil sample locations.

(3) Equivalent to a residential excess lifetime cancer risk of $1x10^{-6}$ (c) or a hazard quotient of 1 (n). These reference values are from the *Risk-Based Concentrations Tables, Second Quarter 1994, Region III*, Prepared by Roy L. Smith, Technical Support Section, Philadelphia, Pennsylvania, April 20, 1994. The risk-based concentration presented for lead (400 mg/kg) is a conservative residential screening value. This reference value is from the *Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities*, OSWER Directive No. 9355.4-12, Office of Solid and Emergency Response, Washington, D.C., July 1994.

(4) Equivalent to an industrial excess lifetime cancer risk of $1x10^{-6}$ (c) or a hazard quotient of 1 (n). These reference values are from the *Risk-Based Concentrations Tables, January - June 1995, Region III*, Prepared by Roy L. Smith, Technical Support Section, Philadelphia, Pennsylvania, March 1995.

Table 3
McCARTY'S/PACIFIC HIDE AND FUR - SUMMARY OF POTENTIAL INORGANIC ELEMENTS OF CONCERN IN SUBSURFACE SOIL

Analyte	Maximum Detected (mg/kg)	Background Soil (95th Percentile) (mg/kg)	No. of Locations Exceeding Background/ Total No. of Samples[1]	Residential Risk-Based Concentration (mg/kg)[3]	No. of Locations Exceeding Residential Risk-Based Concentration/ Total No. of Samples[1]	Industrial Risk-Based Concentration (mg/kg)[4]	No. of Locations Exceeding Industrial Risk-Based Concentration/ Total No. of Samples[1]
Arsenic	61.7	4.81	3/18	0.37c	18/18	3.3c	9/18
Beryllium	0.551	0.8	0/18	0.15c	12/18	1.3c	0/18
Lead	3,740	20.1	6/18[2]	400n	2/18	NA	NA

NA - Not available.
c - Equivalent to an excess lifetime cancer risk of $1x10^{-6}$.
n - Equivalent to a hazard quotient of 1.

(1) Total number on samples includes laboratory analyzed samples only; XRF screening data are not included.

(2) A total of 18 subsurface soil samples were submitted for laboratory analysis; XRF field screening measurements were collected at 12 additional subsurface soil sample locations.

(3) Equivalent to a residential excess lifetime cancer risk of $1x10^{-6}$ (c) or a hazard quotient of 1 (n). These reference values are from the *Risk-Based Concentrations Tables, Second Quarter 1994, Region III*, Prepared by Roy L. Smith, Technical Support Section, Philadelphia, Pennsylvania, April 20, 1994. The risk-based concentration presented for lead (400 mg/kg) is a conservative residential screening value. This value is from the *Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities*, OSWER Directive No. 9355.4-12, Office of Solid and Emergency Response, Washington, D.C., July 1994.

(4) Equivalent to an industrial excess lifetime cancer risk of $1x10^{-6}$ (c) or a hazard quotient of 1 (n). These reference values are from the *Risk-Based Concentrations Tables, January - June 1995, Region III*, Prepared by Roy L. Smith, Technical Support Section, Philadelphia, Pennsylvania, March 1995.

Table 4
MCCARTY'S/PACIFIC HIDE AND FUR - SUMMARY OF POTENTIAL INORGANIC ELEMENTS OF CONCERN IN GROUNDWATER
(Units: µg/L)

SHALLOW AQUIFER[1]

Analyte	Upgradient		Downgradient								Risk-Based Criteria[2]	MCL[3]
	MW-1B	MW-5B	MW-2B	MW-3B	MW-4B	MW-6B	MW-11S	MW-1S	MW-2S	MW-9S		
Aluminum	29 J	ND	195	34 J	148	38 J	46 J	20 J	20 J	ND	110,000n	50(s)
Antimony	11.4	18.3	10.4	6.98	9.98	9.28	9 J	9.28	11.1	2.6 J	15n	6
Arsenic	2.28	2.4	4.73	2.32	2.8	2.42	2.24	2.35	2.14	1.7 J	0.038c	50
Chromium (total)	ND	5.3 J	3,050	6.4 J	19 J	ND	ND	ND	ND	ND	180c[4]	100
Iron	222	57.7	8,100	124	396	25.5	60.1	46.2	284	ND	NA	300
Nickel	ND	ND	107	8.7	39 J	ND	ND	ND	ND	ND	730n	100

DEEP AQUIFER[1]

Analyte	Upgradient		Downgradient									Risk-Based Criteria[2]	MCL[3]
	MW-1A	Foulger's	MW-2A	MW-3A	MW-6A	MW-11D	MW-1D	MW-2D	Walt's	EPA-9	EPA-10		
Antimony	11.7	4.2 J	9.28	10.3	8.48	11.1	11.6	11.1	10.4	5.4 J	6.7 J	15n	6
Arsenic	4.65	2.25	1.2 J	2.53	2.5	2.69	2.55	2.78	2.2	ND	ND	0.038c	50
Iron	85.6	53.8	1,760	124	ND	14 J	16 J	117	54.5	1,220	2,900	NA	300
Lead	43.8	2.1	18.1	ND	ND	ND	1.8 J	1.3 J	2.6 J	ND	ND	NA	15[5]
Manganese	2.9 J	2.5 J	52.7	39.3 J	1.1 J	1.1 J	1.1 J	14.4 J	3.3 J	69.7	123	39n	50(s)
Nickel	ND	ND	ND	453	ND	ND	ND	ND	ND	ND	ND	730n	100
Zinc	6,110	40.9	4,830	63.6	11 J	29.3	32.2	27.6	642	15 J	9.8 J	11,000n	5,000(s)

J - The analyte was analyzed for and was positively identified, but the associated numerical value may not be consistent with the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.

ND - Not detected.

c - Equivalent to an excess lifetime cancer risk of $1x10^{-6}$.

n - Equivalent to a hazard quotient of 1.

(1) - Reported values are maximum detected concentrations.

(2) - Equivalent to a lifetime excess cancer risk of $1x10^{-6}$ (c) or a hazard quotient of 1 (n). These reference values are from the *Risk-Based Concentrations Tables, Second Quarter 1994, Region III*. Prepared by Roy L. Smith, Technical Support Section, Philadelphia, Pennsylvania, April 20, 1994.

(3) - Where MCLs are not available, secondary MCLs are provided and denoted by an (s).

(4) - This is the risk-based criterion for chromium VI.

(5) - 15 µg/L is a federal action level for lead at the tap.

Table 5
MCCARTY'S/PACIFIC HIDE AND FUR
POTENTIAL CONTAMINANTS OF CONCERN IN SOIL AND GROUNDWATER

Chemical	Soil	Groundwater
Antimony	X	X
Arsenic	X	X
Beryllium	X	
Cadmium	X	
Chromium		X
Copper	X	
Lead	X	X
Manganese	X	
Nickel		X
Tetrachloroethene		X
Trichloroethene		X
Bis(2-ethylhexyl)phthalate		X
Benzo(a)pyrene	X	
Benzo(b)fluoranthene	X	
Dibenz(a,h)anthracene	X	
Aldrin		X
Aroclor 1254		X
Dieldrin		X

Table 6
McCARTY'S/PACIFIC HIDE AND FUR
INDUSTRIAL AND RESIDENTIAL SCENARIOS: INCIDENTAL INGESTION OF SOIL

Equation:

$$Intake\ (mg/kg\text{-}day) = \frac{CS \times IR \times CF \times EF \times ED \times FI}{BW \times AT}$$

where:

CS = Chemical concentration in soil (mg/kg)
IR = Ingestion rate (mg soil/day)
CF = Conversion factor (10^{-6} kg/mg)
EF = Exposure frequency (days/year)
ED = Exposure duration (years)
FI = Fraction ingested from contaminated source (unitless)
BW = Body weight (kg)
AT = Averaging time (days)

Variable	Receptor	Case	Value (Rationale)
CS	Adult-Worker	RME	Exposure point concentration in surface soil
	Adult-Resident	RME/Average	
	Child-Resident		
IR	Adult-Worker	RME	50 mg/day[a]
	Adult-Resident	RME/Average	100 mg/day[a]
	Child-Resident	RME/Average	200 mg/day[a] (Children 1-6 years old)
EF	Adult-Worker	RME	250 days/year[a]
	Adult-Resident	RME	350 days/year[a] (assumes 2 weeks of vacation/year)
	Child-Resident		
	Adult-Resident	Average	275 days/year[a] (fraction of time spent at home, 0.75, multiplied by 365 days/year)
	Child Resident		
ED	Adult-Worker	RME	25 years[a]
	Adult-Resident	RME	24 years[a] (90th percentile duration at a single residence [30 years] less 6 years for child exposure duration)
	Adult Resident	Average	9 years[a] (50th percentile duration at a single residence)
	Child-Resident	RME/Average	6 years[a] (entire duration of age group)
FI	Adult-Worker	RME	1.0
	Adult-Resident	RME/Average	1.0
	Child-Resident		
BW	Adult-Worker	RME	70 kg[a] (average adult body weight)
	Adult-Resident	RME/Average	70 kg[a] (average adult body weight)
	Child-Resident	RME/Average	15 kg[a] (average for 1- to 6-year old age group)
AT	Adult-Worker	RME	Pathway-specific period of exposure for noncarcinogenic effects (i.e., ED x 365 days/year), and 70-year lifetime for carcinogenic effects (i.e., 70 years x 365 days/year)[a]
	Adult-Resident	RME/Average	
	Child-Resident		

[a] United States Environmental Protection Agency, August 16, 1991a, *Supplemental Risk Assessment Guidance for Superfund*, EPA, Region 10, Seattle, Washington.

Abbreviations:
RME = Reasonable Maximum Exposure

Table 7
McCARTY'S/PACIFIC HIDE AND FUR
REASONABLE MAXIMUM EXPOSURE - INDUSTRIAL SCENARIO

CANCER RISKS FOR SOIL INGESTION

Location	Arsenic	Beryllium	Benzo(a)pyrene	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Total Cancer Risk
McCarty's, Inc. Property	4.2×10^{-6}	4.0×10^{-7}	8.5×10^{-7}	1.6×10^{-7}	1.6×10^{-6}	7.1×10^{-6}
Pacific Hide and Fur/UPRR Properties	1.0×10^{-5}	9.7×10^{-7}	ND	ND	ND	1.1×10^{-5}

HAZARD QUOTIENTS FOR SOIL INGESTION

Location	Antimony	Arsenic	Beryllium	Cadmium	Copper	Manganese	Hazard Index
McCarty's, Inc. Property	0.039	0.022	0.000052	0.043	0.056	0.041	0.2
Pacific Hide and Fur/UPRR Properties	0.088	0.052	0.00013	0.076	0.090	0.073	0.4

TABLE 8

MCCARTY'S/PACIFIC HIDE AND FUR - COMPARISON OF FINAL OPERABLE UNIT CLEANUP ALTERNATIVES

Evaluation Criteria:	Alternative 2A Soil Removal/Soil Cap: Excavate/treat/off-site disposal of RCRA soil only, cap non-RCRA soil, institutional controls, 5-year reviews, 1-yr. GW monitoring.	Alternative 2B Soil Removal/Asphalt Cap: Same as Alt. 2A except cap is asphalt.	Alternative 3A Soil Removal/ Subsurface Soil Cap: Same as Alt. 2A, including removal/off-site disposal of non-RCRA surface soil >1,000ppm.	Alternative 3B Soil Removal: Same as Alt. 2A, including removal/off-site disposal of ALL non-RCRA soil >1,000ppm. Soil cap unnecessary.	Alternative 4 Soil Washing: Site-wide treatment of all soil >1,000ppm. Same as Alt. 2 except as noted and soil cap unnecessary.	Alternative 5 On-Site Fixation/ Containment: Site-wide treatment/ capping of all RCRA soil; containment/ capping of non-RCRA >1,000ppm. Same as Alt. 2 except 30-yr g.w. monitoring.
Overall Protection of Public Health & the Environment	Moderately protective. RCRA waste treated/ disposed off-site. Risks transferred to LF. Potential pathways/risks reduced; some potential for air releases from excavation & transport.	Moderately protective. Same as Alt. 2A. Asphalt cap considered more protective (more durable and less permeable).	Protective. Same as Alt. 2A except all soil >1,000ppm at surface removed. Soil cap over subsurface soil >1,000ppm. Potential for airborne releases from excavation and transport. Risk transferred to LF.	Very Protective. Same as Alt. 2A except all soil >1,000ppm removed from site. Potential pathways/risks eliminated; potential for airborne releases from excavation and transport. Risk transferred to LF.	Very Protective. All soil >1,000ppm treated. Potential pathways/risks eliminated; potential for airborne releases from excavation. Risk transferred to LF from "waste" generated during washing.	Moderately Protective. All RCRA soil treated prior to placement in on-Site LF. Soil >1,000ppm consolidated in on-Site LF. Potential pathways/risks reduced; potential for airborne releases from excavation.
Compliance with ARARs	Meets all ARARs.	Meets all ARARs.	Meets all ARARs.	Meets all ARARs.	Meets all ARARs.	Meets all ARARs.
Long-term Effectiveness	Poor. Risk of direct contact reduced; risks transferred to LF. Soil cap difficult to maintain at operating facility; future risks to GW if cap fails.	Poor. Risk of direct contact reduced; risks transferred to LF. Uncertainty with maintaining cap integrity; future risks to GW if cap fails.	Fair. Risk of direct contact reduced; risks transferred to LF. Only subsurface soil >1,000ppm left on-site; uncertainty with maintaining cap integrity; future risks to GW if cap fails.	Good. Risk of direct contact eliminated; risks transferred to LF. Threat to GW from lead >1,000ppm eliminated.	Good. Risk of direct contact eliminated. Threat to GW from lead >1,000ppm eliminated. Some risk transferred to LF.	Fair. Risk of direct contact reduced. Permanence of fixated material unknown. Uncertainty with maintaining cap integrity; future risks to GW if cap fails.
Reduction of Toxicity, Mobility & Volume	Average. Most highly cont. material solidified; removed to off-site, permitted LF. Volume reduction through off-site disposal of RCRA soil only.	Average. Most highly cont. material solidified; removed to off-site, permitted LF. Volume reduction through off-site disposal of RCRA soil only.	Average. Most highly cont. material solidified; disposed in off-site, permitted LF along with surface soil >1,000ppm. Volume reduction through off-site disposal of RCRA soil and surface soil >1,000ppm.	Average. All soil >1,000ppm removed from site. RCRA soil treated prior to placement in off-site, permitted LF. Volume reduction through off-site disposal.	Average. All soil >1,000ppm treated via "washing"; off-site disposal of contaminated residuals. Reduction in volume & mobility.	Average. All RCRA soil treated prior to placement in on-site cell; soil >1,000ppm consolidated in cell. Increase in volume but reduction in mobility.
Short-term Effectiveness	Dust emissions during excavation; potential distribution of contaminated soil during transport off-site to LF; response objectives could be achieved within 3 months.	Dust emissions during excavation; potential distribution of contaminated soil during transport off-site to LF; response objectives could be achieved within 4 months.	Dust emissions during excavation; potential distribution of contaminated soil during transport off-site to LF; response objectives could be achieved within 4 months.	Dust emissions during excavation; potential distribution of contaminated soil during transport off-site to LF; response objectives could be achieved within 4 months.	Dust emissions during excavation; response objectives could be achieved within 7 months. Limited impacts expected from transport of contaminated soil & waste water off-site.	Dust emissions during excavation; response objectives could be achieved within 6 months.
Implementability	Tech. & admin. feasible. Excavation easy to implement; straightforward cap construction.	Tech. & admin. feasible. Excavation easy to implement; straightforward cap construction.	Tech. & admin. feasible. Excavation easy to implement; straightforward cap construction.	Tech. & admin. feasible. Excavation easy to implement.	Complex to construct and implement. Significant materials processing and treatability testing req'd. Specialized equipment, skilled labor necessary.	Complex to construct and implement. Cap & location of cell would interfere w/ future land use. Significant materials processing & treat. testing req'd.
Cost	Current est. = $4.2	Current est. = $4.8	Current est. = $4.95	Current est. = $5.1	Current est. = $5.4	Current est. = $5.0
State Acceptance	Unacceptable.	Unacceptable.	Unacceptable.	State concurs.	State concurs.	Unacceptable.
Community Acceptance	No specific comments received from local citizenry.	No specific comments received from local citizenry. PRP Group favors modified version.	No specific comments received from local citizenry. PRP Group opposes soil removal.	No specific comments received from local citizenry. PRP Group opposes soil removal.	No specific comments received from local citizenry. PRP Group opposes soil removal.	No specific comments received from local citizenry. PRP Group favors modified version.

TABLE 9

Comparison of Remedies Between Region 10 "Industrial Use" Sites

Site Name	Lead Cleanup Level	Selected Remedy	Comparison to McCarty's/ Pacific Hide and Fur
Harbor Island Soil and Ground-water	1,000 ppm; no excavation of hot spots (inconclusive TCLP results)	3" asphalt cap in parking lots; reinforced concrete cap in areas of heavy equipment use	Facility operations are not similar. Asphalt cap in low impact areas. Lacks potable GW source beneath Site.
Gould	1,000 ppm (surface); TCLP (subsurface)	Tried recycling to recover lead from battery casings; stabilization w/soil cap; remedy under reconsideration	Facility operations are not similar. 1988 ROD requirements more stringent than those proposed at this Site.
Tacoma Tar Pits	166 ppm (based on "acceptable dose"); 1,000 ppm (for hot spot excavation in "peripheral areas")	Operating facility (treatment of contaminated soils; engineered cap). Non-operating facility (stabilization, RCRA cover/grass, institutional controls)	Much more stringent requirements (not comparable to this Site).
South Tacoma Field	1,000 - 18,000 ppm (cap); above 18,000 ppm (soils fail TCLP-treatment)	Soil or asphalt cap depending on long-term land use; treat above 18,000 ppm & dispose on-Site.	Facility operations are not similar. Amount of cont. soil & costs major factors in remedy selection.
General Metals (Washington State-lead Site)	1,000 ppm	Operating facility (12" reinforced concrete, imperm. liner & 6" compacted subbase; Non-operating portion (9" ADOT large aggregate indust. surface, 3" low permeability asphalt & 6" compacted subbase)- revised	Facility most like this Site. Fairly substantive and expensive cap required on operating portion in comparison to cap proposed by PRPs.

Bunker Hill Mining/Metallurgical Complex is not comparable to other "industrial use" sites in Region 10 and, was therefore, not considered in this analysis.

APPENDIX A

RESPONSIVENESS SUMMARY
MCCARTY'S/PACIFIC HIDE AND FUR
RECORD OF DECISION - FINAL OPERABLE UNIT

This responsiveness summary summarizes and responds to substantive comments received during the public comment period regarding United States Environmental Protection Agency's (EPA's) proposed cleanup plan for the McCarty's/Pacific Hide and Fur Superfund Site located near Pocatello, Idaho. The Proposed Plan was based on information in the October 1994 remedial investigation/feasibility study (RI/FS) report. The RI/FS and the Proposed Plan are available for review at the Pocatello Public Library and at EPA's offices in Seattle, Washington. Copies of the Proposed Plan were mailed to local citizens that were on a mailing list developed as part of the Community Relations Plan for this Site.

Three comment letters were received during the public comment period. EPA's response to these comments follows.

Comments and Agency Responses

A. Private Citizens' Comments: Two letters were received from private citizens residing in Pocatello. One of the letters expressed support for the cleanup of the lead contamination at the Site. The other expressed concern over the length of time taken to study and clean up the Site, and the significant costs of Superfund work. EPA responded in some detail to this citizen's concerns in a letter to Congressman Michael D. Crapo dated January 10, 1995. The private citizen sent two letters, one to EPA and the other to his congressional representatives expressing his concerns to which EPA replied. These letters, together with the Agency's response, are in the Site Administrative Record (AR) for this remedial action.

Response: In short, EPA believes that the selected remedy for the remaining lead-contaminated soil can be easily and relatively quickly implemented, and is cost effective. The reader is referred to the AR for this remedial action for a detailed response to the private citizen's concerns as mentioned above.

B. Potentially Responsible Party (PRP) Group Comments: EPA received an extensive comment package from a group of parties that had previously been identified as potentially responsible parties at the Site. The PRP Group submitted comments on behalf of ANR Freight System, Inc., AT&T, FMC Corporation, McCarty's, Inc., and certain McCarty individuals, Monsanto Company, Pacific Fruit Express Company, Pacific Hide and Fur Depot, Inc., J.R. Simplot Company, Terteling Company, Inc., and Union Pacific Railroad. The comment package, dated December 29, 1994, is in

the AR for this Site. The PRP Group's comments can be divided into six (6) categories:

1. **cleanup goals**
2. **recommended remedy**
3. **soil contamination estimates**
4. **risk assessment**
5. **miscellaneous**
6. **Region 10 site comparisons**

Comments 1 and 2 below are from Exhibit A of the PRP Group's comment package entitled Significant Issues Applying To All Of The Documents.

Comment 1. Cleanup Goals- The PRP Group expressed concern that EPA had not evaluated risks for a current/future industrial land use scenario. The PRP Group was also concerned that EPA had assumed the property would be made available for unrestricted future land use as opposed to strictly industrial use, noting that the property is located in an industrial corridor, is zoned as such, and has been used in this manner "...for more than 50 years".

Response: In the October 1994 Risk Assessment, it was assumed that future land use could be residential. Therefore, potential health risks and cleanup goals were estimated under a future residential land use scenario for the soil contaminants of concern identified in the baseline Human Health Risk Assessment. These contaminants included antimony, arsenic, cadmium, copper, lead, and manganese.

The cleanup level for lead assuming future residential exposure was set at 400 ppm. This value is the health protective screening level calculated using the EPA's Integrated Uptake Biokinetic (IUBK) model recommended by EPA Superfund guidance. The 400 ppm value was calculated using EPA default exposure assumptions developed for the model. Although site-specific data can be used in the IUBK model, such data were lacking for this Site.

Following EPA's decision to assume future industrial land use when determining cleanup goals, an addendum to the original Risk Assessment was prepared. This addendum calculated potential health impacts to workers. Lead was the only contaminant of concern identified for workers. A cleanup level of 1,000 ppm for lead in soil was set. The 1,000 ppm cleanup level is sufficiently protective for on-Site workers, and has been used in the past for sites where the expected future land use is industrial. This is consistent with the present and anticipated future land use scenario for this Site and with the cleanup goals that were designated for the polychlorinated biphenyls- (PCB) and

PCB/lead-contaminated soil operable unit cleanup completed in 1992.

In combination with the cleanup of the contaminated soil, a critical element of the selected remedy requires placing and enforcing property restrictions to prohibit land uses allowed under residential/neighborhood commercial and professional zoning.

Comment 2. Recommended Remedy- The PRP Group expressed concern that unrestricted future land use had not been stated as a remedial action objective (RAO) for the Site and, that all of the alternatives with the exception of "Ground-Water Monitoring and Property Restrictions" achieved the stated RAOs. The PRP Group states that if the capping alternative they advocate were selected, the cap's integrity could, in fact, be managed by proper design and maintenance. Further, the PRP Group is concerned that the excavation and off-Site disposal alternative is not the most cost effective. According to the PRP Group, an excavation and off-Site disposal alternative "simply moves the contaminated materials from the current property to another off-Site location" thereby transferring risks. In addition, it poses health risks during transport. Finally, the PRP Group states that EPA should have considered a "capping only" alternative (i.e., without excavation and off-Site disposal).

Response: In response to the concern that unrestricted future land use had not been considered as a cleanup objective (synonomous with RAO) at the Site, EPA indicated in sub-section 2.1.3.2 of the October 1994 FS entitled Future Land Use that "[i]n the future, the Site may be developed for residential and/or industrial use. For the future land use scenario, Site residents were considered potential receptors, as required by EPA Region 10 guidance (EPA 1991). This scenario is [also] protective of current Site workers, workers who may be on-Site during remediation activities, and any trespassers or Site visitors."

With respect to the concern regarding cap integrity, the engineering designs of the caps proposed in the October 1994 FS would have to be altered considerably to withstand the current scrap recycling activities on the Pacific Recycling and Union Pacific Railroad properties. Prevention of contact with contaminated soils (a primary cleanup objective) is a major concern because of the possibility of cap failure due to recycling activities or future industrial activities at the Site.

Under the selected remedial action, the most highly contaminated soil requires treatment prior to placement in a permitted municipal landfill. Since the soil following treatment is no longer considered hazardous waste, disposal in the permitted municipal landfill is acceptable. The remaining soil

which does not require treatment will also be disposed in a permitted municipal landfill. These landfills must meet and maintain all applicable EPA requirements. While these same requirements can be achieved on-Site, the costs are higher, there are long-term management issues to consider, and the type of future property use would be greatly limited.

A discussion of risks related to the off-site transport of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) wastes is typically provided in the site health and safety plan as recommended in "*Risk Assessment Guidance for Superfund, Human Evaluation Manual, Part C - Risk Evaluation of Remedial Alternatives*":

> "It is important to note, however, that factors not associated directly with hazards particular to a given site (e.g., risk of accidents during off-site motor vehicle transport) are not usually considered during the FS, but instead should be addressed prior to remediation in the site health and safety plan."

The cost effectiveness of the preferred alternative was another concern raised by the PRP Group. Based on EPA's decision to restrict future land use to industrial activities only, EPA re-evaluated the cap design requirements for Alternatives 2A and 2B based on a review of other Superfund sites in the region with similar business operations. The resulting modifications to these alternatives based on this review increased costs significantly. The estimated costs range from approximately $5,355,678 to $5,440,224 which are higher than the selected remedial action.

EPA and the Idaho Department of Environmental Quality (IDEQ) do not believe that a "capping only" alternative would adequately protect human health and the environment at this Site. Given the nature of the operating business and its practices, and the unpredictability of future Site activities, considerable uncertainty exists with the timely identification and repair of any failures in the cap. Over 45% of the remaining contaminated soil is considered a Resource Conservation and Recovery Act-(RCRA) characteristic waste based on leaching tests. A viable source of potable water lies beneath the Site. A primary cleanup objective for the Site is to prevent the infiltration/migration of contaminants in soil to ground water that would result in ground-water contamination in excess of Site-specific action levels, threatening human health.

Comment 3 below is from Exhibit A of the PRP Group's comment package entitled Remedial Investigation. The PRP Group identified five areas of concern regarding soil contamination estimates. This comment has been divided into five parts and EPA is responding accordingly.

Comment 3, Part 1. Soil Contamination Estimates - The first area of concern is the Concentration Isopleth Maps for Lead. The PRP Group contends that the x-ray fluorescence (XRF) field screening measurements yielded generally lower results than the laboratory confirmation analyses, implying that the soil volume estimates may have been underpredicted.

Response 3, Part 1: The correlations between the XRF and laboratory data for samples collected in 1990 and 1991 ($r^2 = 0.76$), and 1993 ($r^2 = 0.996$) were considered adequate to characterize the extent of lead contamination in soil at the Site. Use of an XRF instrument, a cost effective field screening method, allowed for significantly more data points to be analyzed than if fixed laboratory analysis were solely utilized. A sensitivity analysis was presented in Section 4.8.7.1, Table 4-6, of the October 1994 FS.

Comment 3, Part 2. The second area of concern is the Depth of Lead in Soils. The PRP Group suggested that the number, representativeness and reliability of subsurface samples was insufficient to accurately determine the volume of lead-contaminated soil remaining at the Site.

Response 3, Part 2: In 1991, interval sampling using XRF was performed in approximately thirty (30) on-Site locations to determine the depth of lead contamination in both the "hot spots" and the less contaminated areas. Exclusive of the "hot spots", lead contamination was generally limited to the top six (6) inches of soil and oftentimes, to the top 2-3 inches.

During the first operable unit remedial action, twenty-five (25) of the forty-three (43) confirmation sampling sectors were excavated to a depth of six (6) inches below ground. The other eighteen (18) sectors were excavated to depths between twelve (12) and twenty-four (24) inches.

Confirmation samples collected by EPA to verify attainment of the PCB cleanup goals, and which were also analyzed for lead, and samples collected within the boundary of the first operable unit during the 1993 RI, confirmed that lead contamination was generally confined within the top six (6) inches of soil. Lead concentrations in samples collected in the areas excavated to six (6) inches below ground during the first operable unit were generally consistent with background soil lead concentrations or below the XRF instrument detection limit of 48 ppm, indicating that soil lead concentrations were below 1,000 ppm at a depth less than six (6) inches.

Exclusive of the "hot spots", the depth of soil lead contamination across the Site is assumed to be similar to that encountered within the limit of the first operable unit cleanup.

The assumption of surficial contamination is supported by the fact that surface soil contamination in areas where battery recycling did not occur is primarily attributed to tracking by vehicles and personnel, and deposition by airborne particulates.

Finally, the reported lead concentration (25,300 ppm) for the sample collected on the eastern portion of the Union Pacific Railroad property appears to be an anomaly. Many other samples have been collected in this area of the Site and this high lead concentration cannot be reproduced. There is no historical information (i.e., aerial photographs) or testimonial deposition information that indicates that battery recycling activities were conducted in this location.

Comment 3, Part 3. The third area of concern is the Comparison Criteria for Identification of Extent of Contamination in Soils. The PRP Group's concerns relate to EPA's use of the 95th percentile of the background sample data set instead of using maximum background concentrations, thereby artificially enlarging the Site's contaminated area.

Response 3, Part 3: On-Site lead sample data were compared to the 95th percentile of the background soil sample data set. Using the 400 ppm residential screening value for lead as a comparison, the 95th percentile value was 20.1 ppm and the maximum background sample concentration was 23.5 ppm. Therefore, whether on-Site data were compared to the 95th percentile or maximum background concentration is immaterial since the residential lead screening value of 400 ppm (which was the recommended cleanup level for lead in soil in the Proposed Plan) is considerably greater than either of them.

Comment 3, Part 4. A fourth area of concern related to calculating risk-based concentrations under a future residential scenario versus an industrial scenario and the resulting effect on determining the extent of contamination at the Site.

Response 3, Part 4: The issue of calculating risk-based concentrations under a future residential scenario versus an industrial scenario and the resulting effect on determining the extent of contamination at the Site was addressed in the response to Comment 1 above. The volume of soil requiring cleanup under the future industrial land use scenario is approximately 820 cubic yards less than under the future residential land use scenario.

Comment 3, Part 5. Finally, the PRP Group believes that it is inappropriate to compare subsurface soil data to risk-based concentrations.

Response 3, Part 5: Subsurface soils are evaluated as a part of the Risk Assessment to account for the possibility of

future excavation. Excavation can result in subsurface soils being brought to the surface where human contact can occur. Therefore, information on potential risks from subsurface soils is useful in determining if future land use restrictions or other institutional controls are necessary.

Comment 4 below is from Exhibit A of the PRP Group's comment package entitled Baseline Human Health and Ecological Risk Assessment. The PRP Group identified five areas of concern with the results presented in EPA's Baseline Human Health and Ecological Risk Assessment. This comment has been divided into five parts and EPA is responding accordingly.

Comment 4, Part 1. Risk Assessment - The first area of concern is Exposure Scenarios. The PRP Group contends that the lack of an industrial use scenario provides no estimation of risks associated with the current Site and its probable future land use giving the decision-makers less information when considering various risk management options. They assert that the risk calculations represent a significant overestimation of Site risks for industrial workers.

Response 4, Part 1: These concerns are addressed in EPA's response to Comment 1 above.

Comment 4, Part 2. The second area of concern is Exposure Point Concentrations (EPCs). The PRP Group believes that EPA's use of individual sample results to establish risk, rather than using average concentrations across the Site overstates the risk. They noted that EPA guidance states that an "[a]verage concentration is most representative of the concentration that would be contacted at a site over time." In contrast, the approach used in the baseline Risk Assessment for this Site is analogous to a "hot spot" analysis.

Response 4, Part 2: EPA's risk assessment guidance states that "averaging soil data over an area the size of a residential backyard (e.g., an eighth of an acre) may be most appropriate for evaluating the residential soil pathways". Therefore, because the October 1994 Risk Assessment assumed a future land use of residential, the appropriate exposure unit to be used for the exposure point concentration was a residential lot.

Also, according to EPA guidance, the exposure point calculation should be the 95th percentile upper confidence limit (UCL95) on the average of the soil concentration values. To calculate the UCL95, data from 10 to 20 samples per exposure area should be used. Calculation of the UCL95 for residential lot sizes at the Site was not possible because the density of soil samples was insufficient. Therefore, estimates of risk for each soil sample were made.

For the industrial scenario, the EPCs were based upon average soil concentrations. This is because the exposure area was assumed to be larger than a residential lot and sufficient sampling points were available to calculate average values. Site-wide EPCs were calculated for the McCarty's, Inc. property separately, and for the UPRR and Pacific Hide and Fur Depot, Inc. properties combined. Where greater than ten (10) data points were available, the UCL95 on the mean was used as the EPC. If less than 10 data points were available, then the maximum detected concentration was used as the EPC. The June 1995 Risk Assessment addendum provides the results of the Site-wide EPC calculation under the industrial scenario.

The Site-wide EPCs for lead were determined to be 234,297 ppm for the McCarty's, Inc., property and 4,840 ppm for the combined UPRR and Pacific Hide and Fur Depot, Inc., properties. As recommended by national EPA guidance, the maximum detected concentration on the McCarty property was used as the EPC because the 95 percent upper confidence limit was greater than the maximum detected on-Site lead concentration.

Comment 4, Part 3. The third area of concern is Potential Risks Associated with Lead. This concern relates to EPA's recommendation in the Proposed Plan based on a residential land use scenario of setting a Site-specific cleanup level for lead at 400 ppm.

Response 4, Part 3: This concern was previously addressed in EPA's response to Comment 1 above.

Comment 4, Part 4. The fourth area of concern is Chromium as a Chemical of Potential Concern in Ground Water. The PRP Group is concerned that chromium was identified as a contaminant of concern in ground water but was not found in Site soil, and was detected in only one on-Site well.

Response 4, Part 4: Additional testing of the well with elevated chromium concentrations indicates that the problem is well-specific and probably relates to its construction. An addendum to the RI has been prepared documenting this clarification. This information is available in the Site AR for this remedial action.

Comment 4, Part 5. The final area of concern is Average and Reasonable Maximum Exposures. The PRP Group's concern relates to EPA's calculation of these two exposure values, characterizing them as nearly identical in the baseline Human Health Risk Assessment.

Response 4, Part 5: The reasonable maximum exposure (RME) is calculated using mid-range values for some exposure parameters and upper-bound values for others. This is done so that the

combination of all of these parameters in an exposure equation results in an estimate of the "reasonable" exposure not the worst possible exposure. Average or more typical values are used to calculate the average exposure.

A 10-fold difference in exposure (and risks) for cancer and a smaller difference for non-cancer effects were calculated for the baseline Human Health Risk Assessment between the RME versus average exposure (assuming a future residential land use scenario). As recommended by EPA Region 10's risk assessment guidance, different values were used for exposure frequency and exposure duration in calculating the RME versus average exposures. For soil intake, the same values were used for both the RME and average exposure calculations because a value of 200 milligrams per day for children is considered to be an upper end of the average. It is one of the average values used in the RME calculation and, is also an appropriate value in calculating the average exposures.

For the exposure point concentrations, the UCL95 on the average and the average value would ideally be used for calculating the RME and average exposures, respectively. This could result in substantial differences in the exposure estimates between RME and average exposure. However, as has previously been described, it was not possible to adequately calculate an average or a UCL95 on the average for the residential scenario due to the small number of samples (in many cases, n=1) in areas that would represent a residential plot.

The average exposure value was not calculated for the industrial scenario because Region 10 risk assessment guidance provides no default values for this scenario. Therefore, only RME values were calculated for the industrial scenario.

The Site-wide EPCs for lead were determined to be 234,297 ppm for the McCarty's, Inc., property and 4,840 ppm for the combined UPRR and Pacific Hide and Fur Depot, Inc., properties. The maximum detected concentration on the McCarty property was used as the EPC because the UCL95 was greater than the maximum detected on-Site lead concentration.

Comment 5 below is from Exhibit A of the PRP Group's comment package entitled Feasibility Study.

Comment 5. Miscellaneous - There were eleven (11) areas of concern identified under this heading. The issues pertained to:

1. **Remedial Action Objectives and Cleanup Goals**
2. **Recommended Remedy**
3. **Capping Alternatives**
4. **No Action Alternative**
5. **Volume Estimates**
6. **Estimation of RCRA Characteristic Soils**

7. **Documentation of Cost Estimates**
8. **Scrap Management**
9. **Long-term Ground-water Monitoring**
10. **Technical Memoranda (Inconsistencies Between the Technical Memorandum and the RI/BRA/FS Documents, and Multiple Revisions to the Technical Memoranda)**
11. **Proposed Plan for Final Cleanup**

The PRP Group's concerns are reiterations of those previously raised earlier in their comment package. In the case of comments 1, 2, 3, 5 and 6, the PRP Group is concerned with:

(a) EPA's initial decision to select a cleanup level for the Site based on a future residential land use scenario, without considering a current and expected future industrial use scenario.

(b) the selection of a remedy requiring excavation and off-Site disposal of contaminated soil instead of capping the Site.

(c) EPA's estimation of the volume of contaminated soil above the proposed cleanup level.

Response: EPA's response to Comments 1, 2 and 3 of this Responsiveness Summary address concerns 1, 2, 3, 5 and 6 listed above.

Miscellaneous Comment #4 - No Action Alternative: The PRP Group's concern is that the FS concluded that the resultant risks associated with the no-action alternative would be the same as those identified in the October 1994 baseline Human Health Risk Assessment. They disagree since this alternative included institutional controls restricting property use. The PRP Group contends that resultant risks for industrial workers, had an assessment been conducted using a current industrial scenario, would have been far less than the risks presented in the baseline Risk Assessment.

EPA Response to Comment #4: The "no action" alternative identified in the Proposed Plan and October 1994 FS is actually a "limited action" alternative since it includes repair and maintenance of a Site fence, property restrictions on future land use, five-year reviews, and implementation of a ground-water monitoring program. It is, therefore, accurate to assign some measure of protectiveness to the "limited action" alternative. However, a "no action" alternative most likely would not result in any reduction in risk since it typically does not contain any cleanup measures.

Miscellaneous Comment #7 - Documentation of Cost Estimates: The PRP Group's expressed concern that there was no back-up

documentation provided in the FS for the source of the cost estimates.

EPA's Response to Comment #7: With respect to documentation of cost estimates, these were developed based on: (1) published cost data, (2) EPA contractor cost data gathered from other sites, (3) cost data from the first operable unit remedial action at the Site, and, (4) vendor-, company- and facility- supplied information. This information is readily available to the public.

Miscellaneous Comment #8 - Scrap Management: The PRP Group requested documentation regarding the need for scrap handling and the basis for the 8,000 ton estimate of scrap requiring staging and decontamination.

EPA's Response to Comment #8: The one cost item that was incorrectly reported in the cost estimates provided in Appendices A and B of the October 1994 FS is the "Debris Removal" line item. This cost ($1,080,000) should have been reported as a lump sum, not a unit cost. This estimate was based on the assumption that all scrap in contact with contaminated soil would be relocated to a decontamination area, decontaminated, moved to a temporary staging area, and moved again to a final location. Due to the large volume of scrap, it is assumed that most scrap would need to be moved twice after decontamination. As stated in the RI/FS, scrap management costs account for a large percentage of the total remedial costs for Alternatives 2 through 5. It is feasible that these costs could be significantly reduced if the owners of the scrap can determine a mutually acceptable, cost-effective method of scrap disposition.

Miscellaneous Comment #9 - Long-Term Ground-Water Monitoring: The PRP Group disagreed with EPA's ground-water monitoring program described in the Proposed Plan. They argued it was excessive; that fewer wells should be sampled and fewer compounds included in the analytical program; and, that there were inconsistencies in the requirements between the alternatives.

EPA's Response to Comment #9: Long-term ground-water monitoring requirements will be finalized during remedial design. These requirements include number of wells to be sampled and the list of analytes. One year of quarterly ground-water monitoring is a required component of the selected remedy. Monitoring is necessary to ensure that no contaminants were mobilized during implementation of the remedy and that all federal and state water quality standards are maintained. The requirement to conduct long-term monitoring under Alternative 5 was considered necessary to determine the effectiveness and permanence of the remedy which would involve stabilizing all of the most highly contaminated soil (i.e., RCRA-characteristic waste) overlain with unstabilized

but contaminated soil above 1,000 ppm. This alternative involves on-Site disposal in a containment cell.

The PRP Group expressed concern with apparent inconsistencies between the **Technical Memoranda (Revised Remedial Action Objectives, Remedial Technologies, Alternatives and Screening, and Comparative Analysis of Alternatives) and the October 1994 Remedial Investigation/Risk Assessment/Feasibility Study, as well as the multiple revisions to the Technical Memoranda**. The Technical Memoranda provided preliminary information for use in preparing the Remedial Investigation, Risk Assessment and Feasibility Study. This process is iterative, hence the multiple revisions, and, therefore, differences between these Technical Memoranda, Risk Assessment and the RI/FS are to be expected.

The PRP Group raised seven (7) issues regarding the content of the Proposed Plan. These issues related to the: (1) classification of hazardous waste; (2) calculation of future residential risk rather than current Site risk; (3) clarification of language explaining EPA's current technical guidelines for calculation of "risk" associated with lead exposure; (4) ground-water monitoring as a component of the preferred alternative; (5) description of the effectiveness of the remedy; (6) maintenance of a cap's integrity; and, (7) the selected remedy's satisfaction of the nine criteria.

(1) Issue - Soils left in-place should not be classified as hazardous waste unless they are excavated.

Response - This statement is untrue. The soil has been tested and now, following the first operable unit cleanup, approximately 46% of the remaining contaminated soil at the Site fails TCLP. Even if the contaminated soil which tests as hazardous waste is left in place, RCRA closure requirements would be relevant and appropriate at the Site.

(2) Issue - The summary of Site risks did not include an evaluation of any of the current exposure scenarios.

Response - The *Summary of Current Site Risks and Risks Following Cleanup* might have been more appropriately titled "Summary of Future Residential Site Risks and Risks Following Cleanup" since risk calculations (of current Site conditions and post-cleanup Site conditions) were based on a future residential land use scenario.

(3) Issue - The Proposed Plan language explaining EPA's current technical guidelines for calculation of "risk" associated with lead exposure should have distinguished between the availability of information on adults versus children.

Response - The reference to "Technical Guidelines" in the Proposed Plan refers to the lack of toxicity values for lead. Therefore, lead is not included in either carcinogenic or noncarcinogenic risk calculations. Rather, EPA guidance was used to determine whether a cleanup action was necessary at the Site, and to what level the lead should be remediated.

(4) Issue - Ground-water monitoring was not listed as a component of the preferred alternative.

Response - The Proposed Plan inadvertently omitted the requirement to conduct one year of quarterly ground-water monitoring following implementation of the remedy. The October 1994 FS describes the ground-water monitoring component of the selected remedy.

(5) Issue - The Proposed Plan overstates the effectiveness of the remedy when indicating that it eliminates or treats all of the soils above 400 ppm.

Response - By removing all of the lead-contaminated soil to the cleanup level, the selected remedy removes the contamination at the Site to a level considered protective of on-Site workers. Treatment of all RCRA-characteristic waste is a required component of the selected remedy. Non-RCRA characteristic waste can be disposed in a permitted, municipal landfill operated under 40 CFR 258 without treatment.

(6) Issue - The cap's integrity can be managed through engineering design and maintenance.

Response - Previous responses have already been offered in this Responsiveness Summary addressing the question of maintaining a cap's integrity. The "capping only" alternative is not considered viable as a remedy for this Site based on issues of protectiveness, long-term effectiveness, and cost.

(7) Issue - EPA's selected remedy does not best satisfy the nine criteria.

Response - EPA maintains that the selected remedy best satisfies the nine criteria as previously discussed.

Comment 6 below is from Exhibit E of the PRP Group's comment package Summary of Precedents Established by USEPA Region 10 on Other Sites.

Comment 6. Region 10 Site Comparisons - The PRP Group independently performed an evaluation of exposure scenarios used

in the assessment of risk at nine (9) sites in Region 10. The PRP Group asserts that "[t]he characterization of risks posed by continued industrial uses clearly influenced the previous remedy selection at [this Site] and... at other similar sites [in the region]." They also re-iterated their concern with the Agency's initial stated preference for unrestricted land use at the Site, which has since been modified. As stated in the ROD, a cleanup level has been established based on industrial land use with property restrictions.

The PRP Group identified six (6) sites within Region 10 where capping or covering was a component of the selected remedy for soils. According to the PRP Group, four (4) of these sites were metals salvage yards and recycling facilities similar to the McCarty's/Pacific Hide and Fur Site.

Response: EPA's assessment of the sites submitted by the PRP Group is provided in Table 9.

APPENDIX B

(PHFA3) Pacific Hide & Fur - Final Site Remediation Administrative Record INDEX

HEADING: 1. 0. . SITE BACKGROUND

SUB-HEAD: 1. 1. . Site Background Summary

1. 1. . - 1021717
DATE: 08/01/93 PAGES: 91
AUTHOR: Unknown/Woodward-Clyde Consultants
ADDRESSEE: Unknown/McCarty's/Pacific Hide & Fur PRP Group
DESCRIPTION: Site Background Summary McCarty's/Pacific Hide & Fur Superfund Site Pocatello, Idaho

SUB-HEAD: 1. 2. . X-Ray Fluorescence

1. 2. . - 0000001
DATE: 08/16/90 PAGES: 29
AUTHOR: Unknown/Ecology and Environment, Inc.
ADDRESSEE: Unknown/EPA
DESCRIPTION: Sampling and Analysis Plan, Quality Assurance/Quality Control Plan, Health and Safety Plan for X-Ray Fluorescence Screening Confirmation Soil Sampling (incorporated by reference only, see PHF Addendum Admin. Record Doc. # 1.2 000001)

1. 2. . - 0000002
DATE: 12/18/90 PAGES: 173
AUTHOR: Unknown/Ecology and Environment, Inc.
ADDRESSEE: Unknown/EPA
DESCRIPTION: X-Ray Fluorescence Screening Confirmation Soil Sampling at McCarty's/Pacific Hide and Fur Pocatello, Idaho (This document is incorporated by reference only, see Pacific Hide and Fur Addendum Admin. Record Doc. # 1.2 000002 for actual copy)

1. 2. . - 0000003
DATE: 08/02/91 PAGES: 172
AUTHOR: Unknown/Ecology and Environment, Inc.
ADDRESSEE: Unknown/EPA
DESCRIPTION: Technical Data Rpt. for X-Ray Fluorescence Screening and Confirmation Soil Sampling at McCarty's/Pacific Hide and Fur Superfund Site, ... & UPRR (incorporated by reference only, see PHF Addendum Admin. Record Doc. 1.2 000003)

1. 2. . - 1033715
DATE: 05/01/92 PAGES: 462
AUTHOR: Unknown/Ecology and Environment, Inc.
ADDRESSEE: Unknown/EPA
DESCRIPTION: Interpretive Report for X-Ray Fluorescence Screening and Confirmation Soil Sampling at McCarty's/Pacific Hide and Fur Superfund Site and Union Pacific Railroad

HEADING: 2. 0. . REMEDIAL INVESTIGATION/FEASIBILITY STUDY

SUB-HEAD: 2. 1. . Correspondence

2. 1. . - 1033717
DATE: 09/08/94 PAGES: 2
AUTHOR: Ann Williamson/EPA
ADDRESSEE: Gordon Brown/Idaho Dept. of Health and Welfare
DESCRIPTION: Formal request to the state to identify applicable or relevant and appropriate requirements (ARARs) or other requirements to be considered in evaluating potential cleanup measures

2. 1. . - 1028281
DATE: 11/10/94 PAGES: 6
AUTHOR: Ann Williamson/EPA
ADDRESSEE: Unknown/Unknown
DESCRIPTION: Cover letter and attached copy of EPA's volume calculations relating to the contaminated soil at McCarty's/Pacific Hide and Fur Superfund site (sent to Addressees listed)

2. 1. . - 1028293
DATE: 07/13/95 PAGES: 1
AUTHOR: Ann Williamson/EPA
ADDRESSEE: File/EPA
DESCRIPTION: Memorandum discussing addenda to the McCarty/Pacific Hide and Fur Remedial Investigation, Risk Assessment and Feasibility Study - June 1995

SUB-HEAD: 2. 2. . Work Plan

2. 2. . - 1021718
DATE: 05/01/94 PAGES: 435
AUTHOR: Unknown/Ecology and Environment, Inc.
ADDRESSEE: Unknown/EPA
DESCRIPTION: McCarty's\Pacific Hide and Fur Work Plan, Sampling and Analysis Plan, Quality Assurance Project Plan, Data Management Plan, and Health and Safety Plan, Remedial Investigation Feasibility Study, Final Operable Unit

SUB-HEAD: 2. 3. . Technical Memorandums

2. 3. . - 1021730
DATE: 04/21/94 PAGES: 18
AUTHOR: Sheila Fleming/Ecology and Environment, Inc.
ADDRESSEE: Ann Williamson/EPA
DESCRIPTION: Cover letter and attached Technical Memorandum on the Need for Modeling of Site Characteristics for the McCarty's/Pacific Hide and Fur Superfund Site

2. 3. . - 1033114
DATE: 10/01/94 PAGES: 44
AUTHOR: Unknown/Ecology and Environment, Inc.
ADDRESSEE: Unknown/EPA
DESCRIPTION: Technical Memorandum Revised Remedial Action Objectives McCarty's/Pacific Hide and Fur Pocatello, Idaho

2. 3. . - 1033115
DATE: 10/01/94 PAGES: 47
AUTHOR: Unknown/Ecology and Environment, Inc.
ADDRESSEE: Unknown/EPA
DESCRIPTION: Technical Memorandum Remedial Technologies, Alternatives and Screening Final Operable Unit McCarty's/Pacific Hide and Fur Pocatello, Idaho

2. 3. . - 1033116
DATE: 10/01/94 PAGES: 82
AUTHOR: Unknown/Ecology and Environment, Inc.
ADDRESSEE: Unknown/EPA
DESCRIPTION: Technical Memorandum Comparative Analysis of Alternatives, Final Operable Unit McCarty's/Pacific Hide and Fur Pocatello, Idaho

SUB-HEAD: 2. 4. . Site Characterization Summary

2. 4. . - 1021719
DATE: 06/01/94 PAGES: 912
AUTHOR: Unknown/Ecology and Environment, Inc.
ADDRESSEE: Unknown/EPA
DESCRIPTION: Revised Site Characterization Summary Report/Remedial Investigation Report, Final Operable Unit : McCarty's/Pacific Hide and Fur Appendices A through M

2. 4. . - 1021720
DATE: 06/01/94 PAGES: 1086
AUTHOR: Unknown/Ecology and Environment, Inc.
ADDRESSEE: Unknown/EPA
DESCRIPTION: Revised Site Characterization Summary Report/Remedial Investigation Report Final Operable Unit McCarty's\Pacific Hide and Fur Appendices N through Y

2. 4. . - 1033119
DATE: 10/01/94 PAGES: 155
AUTHOR: Unknown/Ecology and Environment, Inc.
ADDRESSEE: Unknown/EPA
DESCRIPTION: Final Site Characterization Summary Report : Final Operable Unit McCarty's/Pacific Hide and Fur

SUB-HEAD: 2. 5. . Risk Assessment

2. 5. . - 1033120
DATE: 10/01/94 PAGES: 234
AUTHOR: Unknown/Ecology and Environment, Inc.
ADDRESSEE: Unknown/EPA
DESCRIPTION: Baseline Human Health and Ecological Risk Assessment, Final Operable Unit McCarty's/Pacific Hide and Fur

SUB-HEAD: 2. 6. . Remedial Investigation/Feasibility Study (RI/FS)

2. 6. . - 1033113
DATE: 11/23/92 PAGES: 19
AUTHOR: Unknown/Cannon Microprobe
ADDRESSEE: Sam McNary/U.S. Bureau of Mines
DESCRIPTION: Letter discussing 1 fragment of metal well casing and 3 filter papers hosting light brown to reddish powdery solids, excerpt from "Minerals in Soil Environments" attached

2. 6. . - 1033117
DATE: 10/01/94 PAGES: 162
AUTHOR: Unknown/Ecology and Environment, Inc.
ADDRESSEE: Unknown/EPA
DESCRIPTION: Remedial Investigation, Final Operable Unit, McCarty's/Pacific Hide and Fur

2. 6. . - 1033118
DATE: 10/01/94 PAGES: 182
AUTHOR: Unknown/Ecology and Environment, Inc.
ADDRESSEE: Unknown/EPA
DESCRIPTION: Feasibility Study, Final Operable Unit, McCarty's/Pacific Hide and Fur

2. 6. . - 1033175
DATE: 11/10/94 PAGES: 6
AUTHOR: Ann Williamson/EPA
ADDRESSEE: Jim Price/Spencer Fane Britt & Browne
DESCRIPTION: Cover letter and attached copy of EPA's volume calculations relating to the contaminated soil at McCarty's/Pacific Hide and Fur (Letter addressed to addressees listed on cover letter)

SUB-HEAD: 2. 7. . Applicable and Relevant or Appropriate Requirements

2. 7. . - 1033110
DATE: 09/28/94 PAGES: 3
AUTHOR: Gordon Brown/Idaho Division of Environmental Quality
ADDRESSEE: Ann Williamson/EPA
DESCRIPTION: Cover letter and attached ARARs and "To-be Considered" materials

HEADING: 3. 0. . TECHNICAL AND GUIDANCE DOCUMENTS

SUB-HEAD: 3. 1. . EPA Guidance

3. 1. . - 1033112
DATE: 07/14/94 PAGES: 25
AUTHOR: Elliott P. Laws/EPA
ADDRESSEE: Regional Administrators I-X/EPA
DESCRIPTION: OSWER Directive # 9355.4-12, "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities"

HEADING: 4. 0. . PUBLIC PARTICIPATION

SUB-HEAD: 4. 1. . Proposed Plan/Comments

4. 1. . - 1028287
DATE: 01/09/94 PAGES: 2
AUTHOR: Aniko R. Molnar/Southern Pacific Lines
ADDRESSEE: Ann Williamson/EPA
DESCRIPTION: Letter requesting a meeting with EPA to discuss concerns regarding the Proposed Plan

4. 1. . - 1033163
DATE: 10/26/94 PAGES: 10
AUTHOR: Unknown/EPA
ADDRESSEE: Unknown/Unknown
DESCRIPTION: Proposed Plan for Final Cleanup, McCarty's/Pacific Hide and Fur Superfund Site

4. 1. . - 1028292
DATE: 11/17/94 PAGES: 2
AUTHOR: Aniko Molnar/Southern Pacific Lines
ADDRESSEE: Ann Williamson/EPA
DESCRIPTION: Letter requesting a 30 day extension of the public comment period for EPA's Proposed Plan, and requesting a meeting with EPA to clarify certain issues regarding the Proposed Plan

4. 1. . - 1028291
DATE: 11/28/94 PAGES: 1
AUTHOR: Gabe Faulk/Unknown
ADDRESSEE: Ann Williamson/EPA
DESCRIPTION: Letter commenting on the site cleanup and requesting a copy of the study that EPA performed at the site

4. 1. . - 1028290
DATE: 11/29/94 PAGES: 3
AUTHOR: Kenneth Harten/Unknown
ADDRESSEE: Ann Williamson/EPA
DESCRIPTION: Letter commenting on the Proposed Plan, newspaper article attached

4. 1. . - 1028289
DATE: 11/30/94 PAGES: 4
AUTHOR: Ann Williamson/EPA
ADDRESSEE: Aniko Molnar/Southern Pacific Lines
DESCRIPTION: Letter granting 30 day extension to the public comment period on the Proposed Plan and addressing request for meeting as requested in 11/18/94 letter, and discussing 6 issues raised in 11/17/94 letter

4. 1. . - 1028288
DATE: 12/14/94 PAGES: 23
AUTHOR: Michael D. Crapo/Congress of the United States
ADDRESSEE: Gerald A. Emison/EPA
DESCRIPTION: Letter requesting assistance from EPA in responding to constituent communication (enclosed)

4. 1. . - 1033249
DATE: 12/29/94 PAGES: 195
AUTHOR: James T. Price/Spencer, Fane, Britt & Browne
ADDRESSEE: Ann Williamson/EPA
DESCRIPTION: Transmittal letter and attached comments of the McCarty's/Pacific Hide & Fur PRP Group to EPA's plan for the final operable unit cleanup

4. 1. . - 1028286
DATE: 01/10/95 PAGES: 1
AUTHOR: Ann Williamson/EPA
ADDRESSEE: Aniko Molnar/Southern Pacific Lines
DESCRIPTION: As requested in the 1/9/95 letter, EPA will review comments submitted by the Group during the extension to the public comment period on the proposed plan, and then determine whether a meeting is warranted

4. 1. . - 1028285
DATE: 01/11/95 PAGES: 2
AUTHOR: Gordon Brown/Idaho Division of Environmental Quality
ADDRESSEE: Ann Williamson/EPA
DESCRIPTION: Letter regarding State of Idaho's response to McCarty's/Pacific Hide and Fur PRP's 12/29/95 letter to EPA, requesting that EPA reconsider their decision to utilize the Residential Scenario for clean up criteria

4. 1. . - 1028284
DATE: 03/06/95 PAGES: 1
AUTHOR: George Spinner/Idaho Division of Environmental Quality
ADDRESSEE: Ann Williamson/EPA
DESCRIPTION: Letter regarding the State's position on the revision to the McCarty's/Pacific Hide and Fur Proposed Plan

4. 1. . - 1028283
DATE: 03/14/95 PAGES: 18
AUTHOR: Brian D. Linnan/Woodward-Clyde
ADDRESSEE: Aniko Molnar/Southern Pacific Lines
DESCRIPTION: Cover letter and attached final version of the conceptual cover plan for the McCarty's/Pacific Hide and Fur Superfund Site

4. 1. . - 1028282
DATE: 03/16/95 PAGES: 5
AUTHOR: James T. Price/Spencer Fane Britt & Browne
ADDRESSEE: James D. Oesterle/EPA
DESCRIPTION: Letter presenting thoughts about the Site remedy and articulating reasons that the capping and cover remedy would be the most appropriate at the Site